Career Pathways

Strategies and Resources · 1999

Project developed by Arizona State University
Under contact to the Arizona Department of Education

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About This Guide

(includes guide contents)

Many students fail to connect what they learn in school to potential careers. The failure to see relevance in school causes some to lose interest and drop out. Of those who complete school, many move from job to job in search of career opportunities. Others may struggle through their college courses unaware of where their education will lead.

In the past, high schools have used most of their resources to prepare students for college. In 1996, the American College Testing Service reported an all-time high in the college dropout rate with 27 percent of freshmen dropping out. Of those students who remained in college, only 53 percent managed to graduate in 5 years.

New studies indicate that by 2000 most new jobs will require more than a high school education but less than a 4-year college degree. If educational efforts are focused primarily on preparing students for college, we will fail to meet the needs of all students, and we will fail to prepare students for the majority of future jobs.

Finally, our work force preparedness has reached a crisis mode. Almost daily there is some mention of the growing mismatch between the work force literacy and job skill requirements. It is time students receive the academic standards, work skills, and attitudes they need to be successful in the workplace.

- Students need more extensive career exploration and counseling than has been available previously.
- Academic standards and work skills need to be upgraded and integrated so that their importance and applicability are more apparent.
- Schools and employers need to work together to provide students with more challenging work experiences, to expand and extend career development, and to enhance personal growth.

The challenge faced by schools is restructuring the curriculum and instructional system so that all students have the opportunity to acquire the academic standards, work skills, and attitudes to make a successful transition to work, education, and/or training. The ultimate goal is to prepare young people to be useful, productive citizens with focus and direction.

Career pathways allow administrators, teachers, and counselors to reflect on their ability to meet the increasing skill levels and education requirements of the job. Career pathways helps them organize and update curriculum in a way that relates school to careers, further education and training. In this way all students' needs are served.

Guide Contents

This guide is a companion to the two previous guides–*Career Pathways: An Implementation and Resource Guide* and *Career Pathways: A Guide for Students and Families*–which are described in Section IX. The strategies and resources presented here are not original nor are they all inclusive. Rather they are from among the best practices being undertaken by schools currently implementing the career pathways. The current guide consists of the following sections:

Section I. Career Pathways System

The career pathways approach is a systematic way of organizing a school's courses and activities into a coherent sequence of instruction. Arizona's six career pathways represent the state's industry base and job market. The multiple career options within each pathway are grouped because the people in those careers share similar interests, talents, and abilities.

1. The Arts/Communications/Humanities Career Pathway includes reporters, graphic designers, photographers, typesetters, and others.

2. The Business Systems Career Pathway includes bookkeepers, salespeople, accountants, financial managers, administrative assistants, and others.

3. The Engineering/Industrial Systems Career Pathway includes architects, electricians, civil engineers, automotive mechanics, and others.

4. The Health Services Career Pathway includes medical lab assistants, dentists and physicians, x-ray technicians, registered nurses, and others.

5. The Natural Resources Career Pathway includes greenhouse managers, landscapers, horticulturists, game wardens, and others.

6. The Social/Human Services Career Pathway includes librarians, counselors, caterers, law enforcement officers, cosmetologists, and others.

Figure 1. Characteristics of the Career Pathways

Career Pathways are *viable*. Whether students are planning to work after graduation or enter a college or university, career pathways provide the resources, tools, and ideas necessary for success.

The Career Pathways are *flexible*. Students have many opportunities to evaluate their initial decisions and make changes in their career plans.

The Career Pathways are *inclusive*. Career pathways integrate school-based and work-based learning, academic and vocational courses, and extracurricular activities.

Career Pathways are *coherent*. Career plans are made up of courses and activities that are relevant to students' career goals.

The Career Pathways are *invisible*. Schools can use the pathways to organize their existing courses and career counseling programs to help students make informed career decisions.

In the career pathways system, students choose a pathway and develop a career plan. The intent is not for them to decide on a specific occupation, but to focus their skills, interests, and abilities on a pathway designed around a broad cluster of occupations. The career plan helps them identify the education and/or training they need to reach their career goals. The system's flexibility allows them to make adjustments to their career pathway and career plan as they grow and mature.

Figure 2. Definitions

The terms below are defined as they are used in this document:

Curriculum: The set of programs and courses offered by a high school.

Program: Each subject area in a school's curriculums, for example, mathematics, science, language arts, social studies, and vocational programs.

Course: A subject taught within a program, for example, algebra within mathematics, physics within science, and Applied Biological Systems within Agricultural Business Management-Plant Science.

Career: A lifelong process, unique to each person; involves a sequence of work and leisure activities and includes career development and participation in occupations. A career choice should be an informed decision.

Career pathway: A cluster of occupations aspired to by people with similar interests, talents, and abilities and requiring different levels of education and training.

Career plan: A program of study which includes courses and other educational opportunities a student plans to take in high school and beyond. A career plan should be reviewed and updated periodically.

Industry: The goods and services people produce.

Occupation: The jobs people do.

Many educational opportunities are available in Arizona's schools. The more significant of these are the integration of academic and vocational courses, work-based learning experiences, extra-curricular activities, comprehensive competency-based guidance, academic standards, and vocational programs. Following is a brief discussion of the relationship of each of these activities to career pathways:

Integration of Academic and Vocational Courses

Career pathways help to facilitate integrated curricula. Each pathway requires academic and vocational concepts, knowledge, and procedures which relate to occupations. For example, students in the Health Services Career Pathway need the academic competencies found in anatomy and physiology courses and the vocational competencies of diagnosis and treatment found in the Nursing Assistant Program.

Teachers can develop and coordinate integrated curriculum within their own departments and across disciplines. There are many examples of how teachers can plan curriculum so that specific concepts are reinforced in different classes or share teaching space to support the understanding of specific concepts. For example, the chemistry teacher can use the lab to demonstrate why infection occurs and the health occupations teacher can teach the principles of infection prevention. Figure 3 offers some simple strategies teachers can use to integrate academic and vocational curriculum.

Figure 3. Effective Integration Strategies

Instructional Strategies

- Academic and vocational teachers develop coordinated instruction where the instruction of one reinforces the other
- Academic and vocational teachers develop cooperative assignments
- Vocational student organization projects provide a springboard for collaboration between academic and vocational teachers
- Academic teachers use equipment and materials borrowed from vocational teachers to illustrate applications
- Academic and vocational teachers exchange rooms to teach related concepts to one another's students

Curricular Strategies

- Academic and vocational teachers work together in small groups to develop integrated programs
- Applied courses are implemented in place of general courses with vocational teachers providing academic teachers with real-world application examples

Collaborative Efforts and Circumstances

- Share students' work
- Borrow books from one another
- Share lists and compare lists of academic skills taught and needed in classes
- Observe one another's classes
- Sponsor schoolwide projects

Work-Based Learning Experiences and Extra-Curricular Activities

Whether pursuing on-the-job training or a college degree, students follow a career pathway. For example, a student pursuing a career in journalism will take courses available in the Arts, Communications, and Humanities Career Pathway. Upon graduation the student may get a job at the local newspaper office and take writing courses at the community college. In another situation, a student who wants to be a civil engineer will choose the Engineering and Industrial Systems Career Pathway and take courses to meet the college admission requirements as well as courses in the Electronics Technology Program.

Career pathways also help students experience the work environment. Such experiences may be *exploratory* such as job shadowing, *short-term* such as community service, or *concentrated* such as cooperative education, clinical experiences, school-based enterprises, and individualized occupational training programs. When these activities are incorporated into the curriculum, they complement classroom training by providing related experiences in the actual work environment.

Figure 4. Employer Expectations

Strong work ethic

Ability to acclimate to a fast-paced corporate culture

Ability to learn quickly, show initiative, demonstrate motivation, handle responsibilities, be innovative, and take risks

Understanding of the "big picture" while handling specific job requirements

Willingness to accept a lesser-paying position with opportunities for growth

Computer fluency including the ability to navigate the Internet

Ability to work as part of a team, communicate effectively, manage people, and be decisive

Source: Recruiting Trends 1996-97

Students should also be encouraged to participant in extra-curricular activities. Many of these activities help students develop leadership, communication, team-building skills, as well as technical skills. As an example, Future Farmers of America (FFA) would be an excellent student organization for someone who someday wants to own a horse farm, whereas participation in the Theatre Club would be an asset to a student who is interested in being an actor.

Comprehensive Competency-Based Guidance

Comprehensive Competency-Based Guidance (CCBG) is a statewide effort to establish guidance services as an integral part of a school/district's total educational program. CCBG is organized and implemented by school counselors with the support of teachers, parents, administrators, and community partners. Emphasis is placed on academic and vocational achievement, career decision making, and personal and social development at all grade levels.

- At the elementary level, CCBG helps students master attitudes and skills necessary for success such as decision making and explore educational possibilities, interpersonal communication, and self-concept development.

- In middle/junior high school, CCBG focuses on helping students consider life beyond high school by developing a career plan that covers graduation requirements and takes into account their interests and career goals.

- In high school, CCBG assists students to become responsible adults who can develop realistic life plans based on a clear understanding of themselves and their needs, abilities, interests, and skills. The career plan is reviewed and updated in accordance with their post-graduation goals.

With the emphasis on the school-to-work and the career pathways system, schools are being encouraged to upgrade their counseling programs. The role of the counselor in the 90s is to help students define goals and develop a program of study which integrates both academic and vocational courses, work-based learning experiences, career guidance, and extra-curricular activities. The role of the teacher is to support this model by relating the subject area to careers, helping students with their career development, and creating a meaningful advisement and support system for students.

Guidance programs must help all students develop skills that prepare them for work and lifelong learning. Such skills include the ability to find and use career information, identify a career pathway, apply decision-making skills to career selections, and to develop attitudes and skills to be successful in the workplace. With the increased emphasis on non-baccalaureate degree programs, counselors who traditionally have been involved in preparing students for college and 4-year degree programs must now provide students with better information about postsecondary options such as tech prep and youth apprenticeship.

It is crucial that the guidance program is understood and supported by the entire school in the context of a total educational program. For more information about CCBG, call Vic Harrel at 602-542-5353.

Academic Standards

In 1995, the Arizona Department of Education under the direction of Superintendent Lisa Graham Keegan and the State Board of Education began the development and adoption of new standards for teaching and learning. The results of this effort are the Arizona Academic Standards and the Arizona Instrument to Measure Standards (AIMS). Together these components pave the way for all students to acquire the knowledge and skills they will need to succeed beyond high school.

The academic standards build on the original Arizona Essential Skills. They identify what K-12 students should know and be able to do in the content areas of language arts, mathematics, science, the arts, comprehensive health, foreign language, technology, workplace skills, and social studies. Each standard is defined by various levels of achievement: readiness (kindergarten), foundations (grades 1-3), essentials (grades 4-8), proficiency (grades 9-12), and distinction (honors). In addition each standard has one or more performance objectives which describe the results of learning. Arizona's academic standards share the following benefits to students, teachers, and parents:

- They identify the common expectations for success in school.
- They offer academic equity to all students.
- They provide academic coherence in the school curricula across the state.
- They enable schools/districts to align curriculum, instruction, and assessment.
- They ensure greater accountability for students, teachers, schools, and districts.
- They inform students, teachers, and parents about the expectations for teaching and learning.

Whereas the academic standards are statements of what all students should know and be able to do, they are also statements against which student performance can be measured. Arizona's Instrument to Measure Standards (AIMS) is designed to assess students' proficiency in accomplishing the standards. Proficiency in AIMS will be a portion of the requirements for graduation as local school/district requirements will remain in place. The first statewide AIMS test is planned for all 10th-grade students for the spring of 1999. This will be the first of five opportunities these students will have to take the test.

Developing and implementing academic standards is a major step toward improving student achievement. By setting clear expectations for student performance and by informing parents, teachers, and schools of these expectations, these groups can be more accountable for achieving standards in the academics.

For questions about the academic standards, call Dr. Billie Orr, Associate Superintendent, at 602-542-3504 or Carolyn Watson, Director of Academic Standards, at 602-542-1579.

Vocational Programs

Figure 5 shows the most likely career pathway for Arizona's vocational programs. However, depending on a student's career interest, a vocational program may be included in more than one pathway. For example, a student interested in the design aspects of clothing may choose the Arts, Communications, and Humanities Career Pathway and include the Apparel Design and Merchandising Program as part of his/her course of study, whereas a student interested in the merchandising aspects of clothing may choose the Business Systems Career Pathway and include the Apparel Design and Merchandising Program as part of his/her course of study. The standard is to include courses and programs where they best meet students' career goals.

Figure 5. The Vocational Programs and the Career Pathways

Arts, Communications, and Humanities Career Pathway

Commercial Art
Media Communications
Graphic Communications
Photo Imaging
Drafting Technology

Business Systems Career Pathway

Administrative Information Services
Financial Services
Accounting
Sales and Marketing
Information Processing
Apparel Design and Merchandising

Engineering and Industrial Systems Career Pathway

Automotive Technology
Automotive Collision Repair
Heavy Duty Truck Maintenance
Aircraft Mechanics
Heavy Duty Equipment Operation
Air-Cooled Engine Repair
Machining Technology
Electronics Technology
Building Maintenance
Carpentry
Building Trades
Masonry
Plumbing
Cabinetmaking
Residential Electrician
Welding
Sheet Metal
Heating/Ventilation/Air-Conditioning/Refrigeration
Upholstering

Health Services Career Pathway

Nursing Assistant
Physical Therapy Aide
Medical Laboratory Assisting
Dental Assisting

Natural Resources Career Pathway

Agricultural Business Management–Plant Science
Agricultural Business Management–Horticulture
Agricultural Business Management– Animal Science
Agricultural Business Management–Renewable Natural Resources

Social and Human Services Career Pathway

Child Care and Guidance
Cosmetology
Law Enforcement
Firefighting
Hospitality Services
Food Production and Culinary Arts

Section II. Career Pathways Management Plan

(Overview)

PHASE I. UNDERSTANDING

Step 1. Set the stage.	• Understand why change is taking place and the impact on school/ district, postsecondary institutions, students, parents, business, and community. • Learn about programs that prepare students for work and lifelong learning.

PHASE II. PLANNING

Step 2. Identify staff coordinator.	• Establish the scope of the position. • Define the responsibilities.
Step 3. Establish steering committee.	• Identify members. • Coordinate with programs that prepare students for careers.
Step 4. Form other committees.	• Establish an advisory committee. • Establish subcommittees.
Step 5. Conduct needs assessment.	• Review current data. • Design instrument. • Identify respondents. • Administer needs assessment. • Collect data. • Analyze data. • Report results.
Step 6. Establish system standards.	• Adopt a vision statement and a mission statement.
Step 7. Plan for evaluation.	• Plan for process evaluation. • Plan for product evaluation.

PHASE III. DEVELOPING

Step 8. Design the system.	• Determine objectives, activities, dates of completion, resources, and person(s) responsible. • Identify teams to accomplish work.

PHASE IV. IMPLEMENTING

Step 9. Coordinate teams	• Operationalize the Career Pathways System.
Step 10. Evaluate the system.	• Monitor student progress. • Determine system effectiveness. • Identify strengths and weaknesses. • Revise system.

CAREER PATHWAYS MANAGEMENT PLAN

(Detail)

Phase I. Understanding

Step 1. Set the stage.

Before any action is taken, all staff need to understand the change taking place in society and in school. This may include–

– changing labor force needs,
– the limitations of the school curriculum,
– the need for emphasis on career options, and
– the ways to reach a career goal.

Phase II. Planning

Step 2. Identify staff coordinator.

The first step in planning is to identify the coordinator. This person should be committed to developing a career pathways system. The coordinator's effectiveness requires time to manage the planning, development, and implementation phases. Responsibilities may include–

- acquiring administration, teacher, parent, business, and community support;
- establishing communication procedures with the administration and teaching staffs, parent groups, business, industry, and community groups;
- recommending other committee members as needed;
- planning and facilitating steering committee meetings;
- collaborating with committee members to determine tasks and responsible parties; and
- working closely with other program development committees.

Phase II. Planning

Step 3. Establish steering committee.

After a coordinator is identified, committees to work on various tasks need to be established. The following information will be helpful when establishing new committees.

Steering Committee. This committee initiates the planning process and provides leadership throughout the planning stage. The committee should include counselors, principals, teachers, students, curriculum coordinators, and special needs representatives. The committee should be large enough to represent key groups but small enough to operate efficiently. The steering committee's tasks may include–

- coordinating all activities with other committees;
- establishing timelines;
- identifying the career pathways;
- reviewing the current career development program in relationship to implementing a career pathways system;
- assessing resources needed for implementation;
- providing training and resources needed to enhance implementation;
- establishing relationships with community and business partners;
- gathering career development/information materials and resources;
- determining costs and budget; and
- designing a marketing plan.

Note: Rather than establish a separate committee, these tasks might be assumed by the school site council.

Phase II. Planning

Step 4. Form other committees.

Advisory Committee. The advisory committee's role includes reviewing recommendations made by the steering committee and enlisting support for developing and implementing the career pathways system. Generally advisory committee members are external to the school and represent a variety of constituents and a wide range of opinions and expertise. Membership may include parents, employers, school board members, community organizers, and university and college staff.

In addition, the subcommittees listed below may be needed. If your school is small, these responsibilities can be assumed by the steering committee. A larger school benefits by using separate subcommittees. The steering committee can then focus on leadership and coordination.

The Needs Assessment Subcommittee is responsible for reviewing, designing, conducting, analyzing, and reporting needs assessment efforts.

The System Design Subcommittee is responsible for designing new initiatives based on the work of the Needs Assessment Subcommittee.

The Marketing Subcommittee is responsible for identifying the target audiences and developing a plan for marketing the Career Pathways system to these audiences.

The Evaluation Subcommittee is responsible for outlining, developing, and implementing the evaluation plan.

Phase II: Planning

Step 5. Conduct needs assessment.

This step involves assessing the status of the current career development program. This may include–

- identifying the needs of the students based on current career information,
- providing all information necessary for planning purposes,
- providing information to staff and policymakers to ensure support, and
- identifying processes, activities, materials, and so forth, that are in the implementation phase.

Phase II. Planning

Step 7. Plan for evaluation.

Any effective program uses ongoing processes of review and revision. Before beginning, it is important to outline the process to evaluate effectiveness. Evaluation is the comparison of performance against standards to determine discrepancies between intended and actual results. Two major types of evaluation are needed to provide information for program decisions:

- *Process evaluation* reviews the programs, procedures, structure, and schedule.
- *Product evaluation* assesses the extent to which the program was effective in helping students attain success.

In planning the evaluation, the evaluation subcommittee should utilize the collective expertise of the steering committee and advisory committee.

Phase III. Developing Step 8. Design the system.	This aspect of the action plan should detail the objectives, activities, date of completion, resources, and person(s) responsible for such activities as– – developing the system's overview and history and – designing logos, information packets, single sheet descriptions, newsletters, brochures, etc. It may be necessary to identify a design team and/or a writing team to accomplish these tasks.
Phase IV. Implementation Step 9. Coordinate team tasks.	This step includes all activities necessary to actually operationalize the career pathways system. This may include– – marketing the career pathways system to parents, teachers, students, and business; – holding public information meetings for the community; and – conducting staff development and training for teachers and administrators.
Phase IV. Implementation Step 10. Evaluate the program.	This step involves the actual evaluation of the system's effectiveness. This may include– – monitoring student progress, – determining system effectiveness, – identifying strengths and weaknesses, and – revising the system to address deficiencies or problems.

Section III. Career Pathways Assessment Model

The assessment materials should first be delivered to those schools that are starting to implement career pathways as an integral part of the curriculum and delivery structure. After that, the assessment materials may be delivered in the following increments: schools that have had career pathways in place 1 year, 2-3 years, 4-6 years, and 7-10 years.

It is also suggested that follow-up studies be conducted for several years following the implementation of the career pathways. Purposes for this study include improving the project, providing a basis for new funding, serving as a prototype for other projects, and assessing the economic impact of educational reform in the state.

It is important to know whether students perceive that they gain valuable knowledge and experience regarding careers, if teachers feel adequately prepared to implement the system, and whether business/community partners find the effort beneficial in the short and long term. Suggestions for improving the system and an outline of successes and shortcomings is also important information to acquire.

Using the Surveys

The *Administrative Survey* is delivered to the chairperson of the career pathways design and implementation committee. This person may be a teacher, a counselor, a principal, a vocational director, etc. This survey gathers information regarding aspects of and challenges in designing and implementing career pathways.

The *Business/Community Partner Survey* is delivered to partners who have an active role in designing and implementing career pathways at a local school/district. This survey gathers information regarding the level of involvement in planning and implementation, the types of assistance provided, and the advantages/disadvantages of the system from the partner's perspective.

The *Counselor Survey* is delivered to counselors who work directly with students in delivering interest inventories, scheduling courses, organizing work-based learning experiences, and discussing postsecondary options. The *survey* gathers information regarding the counselor's role in planning and designing the Pathways system, staff collaboration, and perceptions of the importance of career planning for students.

The *Student Survey* is delivered to those students receiving instruction within a career pathways system. Those completing the survey are assumed to have chosen a career pathway within their school and developed an educational/career plan based on that pathway. This survey gathers information regarding career decision making, pathways choice, the advantages/disadvantages of the system from the student's perspective, and postsecondary plans. A school/district may also wish to collect the same information from previous graduates as a baseline for comparison.

The *Teacher Survey* is delivered to those teachers who are delivering instruction within a career pathways system. Those completing the survey may be elementary teachers, middle/junior high school teachers, and/or high school teachers. This survey gathers information regarding the teacher's role in planning and designing the career pathways system, staff collaboration, and perceptions of the importance of career planning for students.

Administrative Survey

This survey is designed to acquire information about your perceptions of your school/district's approach to and progress in developing a *Career Pathways* System.

How would you assess, for each of the components listed below, 1) the degree to which it is a focus of your school's/district's development efforts this year and, 2) the extent of progress accomplished to date?

Column 1: Indicate the degree to which each component is being emphasized this year by checking one code in each row.

Column 2: Indicate the degree to which progress has been made to date on each component by checking one code in each row.

Pathways Component	Degree Emphasized	Extent of Progress
The following items describe activities that may occur in the classroom or at a private, public, or nonprofit place of business; or that link school and business sites.		
a. Gaining support for *Career Pathways* from school staff and teachers	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒
b. Defining and developing *Career Pathways*	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒
c. Organizing curricula to align with *Career Pathways*	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒
d. Providing work-based learning experiences for students	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒
e. Providing work-based learning experiences for teachers	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒
f. Providing work-based learning experiences for counselors	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒
g. Facilitating curriculum partnerships with postsecondary institutions	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒
h. Including parents in development and implementation of *Career Pathways*	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒
i. Marketing *Career Pathways* to employers	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒
j. Marketing *Career Pathways* to parents and the public	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒

k.	Marketing *Career Pathways* to students	Low ❒ Medium ❒ High ❒	Low ❒ Medium ❒ High ❒

To what degree have the following factors been an obstacle to *Career Pathways* development and implementation in your school/district?

Indicate the degree to which each implementation factor has presented a challenge by checking one code in each row.

Implementation Factors		**Degree of Challenge**		
l.	Support from teachers	Low ❒	Medium ❒	High ❒
m.	Support from counselors	Low ❒	Medium ❒	High ❒
n.	Support from administrators	Low ❒	Medium ❒	High ❒
o.	Support from business/community partners	Low ❒	Medium ❒	High ❒
p.	Negative attitudes among parents about *Career Pathways*	Low ❒	Medium ❒	High ❒
q.	Negative attitudes among students about *Career Pathways*	Low ❒	Medium ❒	High ❒
r.	Defining organizational structure for *Career Pathways*	Low ❒	Medium ❒	High ❒
s.	Defining *Career Pathways* guidelines, objectives, or policies	Low ❒	Medium ❒	High ❒
t.	Defining student participation in *Career Pathways*	Low ❒	Medium ❒	High ❒
u.	Conflicts with other reform efforts	Low ❒	Medium ❒	High ❒
v.	Other _____	Low ❒	Medium ❒	High ❒
w.	Other _____	Low ❒	Medium ❒	High ❒
x.	Other _____	Low ❒	Medium ❒	High ❒
y.	Other _____	Low ❒	Medium ❒	High ❒
z.	Other _____	Low ❒	Medium ❒	High ❒

School/District Name: _____

Career Pathways in place (check all that apply):

❒ Arts/Communication/Humanities	❒ Engineering/Industrial Systems	❒ Natural Resources
❒ Business Systems	❒ Health Services	❒ Social/Human Services

Business/Community Partner Survey

This survey is about collaboration efforts with schools and districts in designing and implementing *Career Pathways*. This information will be used to improve the *Career Pathways* system, its implementation, and the collaboration process.

The following questions are about your role in designing and implementing *Career Pathways*.

1. What was your level of involvement in the initial planning stages for *Career Pathways*?

   ❒ High involvement
   ❒ Some involvement
   ❒ Minimal involvement
   ❒ No involvement

2. What is your level of involvement in implementing *Career Pathways*?

   ❒ High involvement
   ❒ Some involvement
   ❒ Minimal involvement
   ❒ No involvement

3. How many of your staff are involved in the design and implementation of *Career Pathways* at the local school/district?

   ❒ 1 - 25
   ❒ 26 - 50
   ❒ More than 50
   ❒ None

4. Who made initial contact from the school/district in recruiting your support?

   ❒ Teacher
   ❒ Counselor
   ❒ Principal
   ❒ Parent
   ❒ Student
   ❒ Business contacted school

5. Are you assisting the school/district in implementing all six *Career Pathways*?

   ❒ Yes ❒ No

   If no, for which of the following are you providing assistance? (check all that apply)

   ❒ Arts/Communications/Humanities
   ❒ Business Systems
   ❒ Engineering/Industrial Systems
   ❒ Health Services
   ❒ Natural Resources
   ❒ Social/Human Services

6. What kinds of assistance do you provide to the school/district in implementing *Career Pathways*? (check all that apply)

   - ❒ Participating in curriculum reorganization based on industry standards
   - ❒ Providing staff to make classroom presentations
   - ❒ Serving as a host for *Career Pathways* committee meetings
   - ❒ Speaking to business groups/parent groups/community groups as an advocate for *Career Pathways*
   - ❒ Providing scholarships to students
   - ❒ Other _____
   - ❒ Other _____
   - ❒ Other _____

The following questions are designed to assess whether the *Career Pathways* partnership has been beneficial to you. Please check the appropriate response.

7.	*Career Pathways* provide a good academic foundation for future employees.	❒ Agree	❒ Disagree	❒ Undecided/Don't Know
8.	*Career Pathways* provide a good occupational foundation for future employees.	❒ Agree	❒ Disagree	❒ Undecided/Don't Know
9.	The school/district communicated its goals and needs clearly to the company.	❒ Agree	❒ Disagree	❒ Undecided/Don't Know
10.	The company did not receive adequate assistance from school/district staff.	❒ Agree	❒ Disagree	❒ Undecided/Don't Know
11.	The company's expectations were met in a positive manner.	❒ Agree	❒ Disagree	❒ Undecided/Don't Know
12.	The company has not received positive feedback from current employees regarding the partnership.	❒ Agree	❒ Disagree	❒ Undecided/Don't Know
13.	The company is willing to continue as a partner.	❒ Agree	❒ Disagree	❒ Undecided/Don't Know

Comments:

_____

_____

_____

_____

Company Information

14. What is the size of your company/agency?

   - ❒ Small (fewer than 100 employees)
   - ❒ Medium (101 - 500 employees)
   - ❒ Large (more than 500 employees)

Counselor Survey

This survey is designed to gather information on your role in implementing *Career Pathways* and how you counsel students using *Career Pathways* information.

Schools/Districts have described many ways to design and implement the *Career Pathways* system. The following questions are related to your experience in initiating *Career Pathways*.

1. Were you involved in designing and implementing *Career Pathways* in your school/district?

   ❒ Yes ❒ No

2. Have you attended inservice activities on *Career Pathways*?

   ❒ Yes ❒ No

3. Did you organize materials (interest inventories, student portfolios, job/career data and information) to support the *Career Pathways* system?

   ❒ Yes ❒ No

   If yes, which of the following did you do? (check all that apply)

   ❒ I used existing materials.

   ❒ I modified existing materials.

   ❒ I created new materials.

   ❒ Other _____

4. In what manner do you provide students with *Career Pathways* information? (check all that apply)

   ❒ in the classroom

   ❒ in one-on-one counseling

   ❒ in school-wide assemblies

   ❒ in student/parent conferences

   ❒ Other _____

In designing and implementing *Career Pathways*…

5. Has your collaboration with *teaching* staff: ❒ increased ❒ decreased ❒ remained the same?

   Comments: _____

   _____

6. Has your collaboration with *administrative* staff: ❒ increased ❒ decreased ❒ remained the same?

   Comments: _____

   _____

7. Has your collaboration with other *counseling/guidance* staff: ❒ increased ❒ decreased ❒ remained the same?

   Comments: _____

   _____

8. Has your collaboration with *business/community* partners: ❒ increased ❒ decreased ❒ remained the same?

   Comments: _____

   _____

9. Is there long-term support for *Career Pathways* (e.g., administratively, financially) in your school/district?

   ❒ Yes

   ❒ No

   ❒ Don't Know

The following assess your perception of the importance of *Career Pathways* for students. Please identify the importance you place on students having the following experiences. Do not assess whether your students have access to these activities or whether you coordinate them, but whether they are important for students.

10. Completing a career interest inventory	Very important	❒
	Somewhat important	❒
	Not important	❒
11. Updating career interest inventory each year	Very important	❒
	Somewhat important	❒
	Not important	❒
12. Completing an educational plan	Very important	❒
	Somewhat important	❒
	Not important	❒
13. Completing a career plan	Very important	❒
	Somewhat important	❒
	Not important	❒
14. Participating in career exploration	Very important	❒
	Somewhat important	❒
	Not important	❒

Please check all the levels that apply to your area of responsibility.

❒ Elementary
❒ Junior High
❒ High

Career Pathways School Demographics Report

This section collects information about your school's organization and size. Please complete one form per reporting school.

1. School Name: _____

2. Student body size:

   - ❒ 100 or fewer students
   - ❒ 101 - 399 students
   - ❒ 400 - 999 students
   - ❒ 1000 - 1999 students
   - ❒ 2000 - 3999 students
   - ❒ over 4000 students

3. Is your school part of a(n):

   ❒ unified district?

   How many elementary schools are there? _____

   How many high schools are there? _____

   ❒ union district?

   With how many elementary schools do you articulate? _____

   ❒ elementary district?

   With how many high schools do you articulate? _____

4. What is the teacher:student ratio on your campus? _____

5. What is the counselor:student ratio on your campus? _____

6. What Career Pathways are in place? (check all that apply)

   - ❒ Arts/Communication/Humanities
   - ❒ Business Systems
   - ❒ Engineering/Industrial Systems
   - ❒ Health Services
   - ❒ Natural Resources
   - ❒ Social/Human Services

7. In what areas are there vocational programs in place? (check all that apply)

   - ❒ Agriculture
   - ❒ Business
   - ❒ Family and Consumer Sciences
   - ❒ Health Occupations
   - ❒ Industrial Education
   - ❒ Sales and Marketing

Student Survey

This survey is about you and your school experience. We want to know whether *Career Pathways* are helping you make decisions about your courses and career.

The following questions are about the decision-making process you used to choose a *Career Pathway*.

1. Did you have a career choice before learning about *Career Pathways*?

   ❒ Yes ❒ No

2. When did you **first** find out about *Career Pathways*?

   ❒ Elementary school
   ❒ Junior high school
   ❒ High school

3. Who talked to you about *Career Pathways*? (check all that apply)

   ❒ Friends
   ❒ Counselors
   ❒ Teachers
   ❒ Family members
   ❒ Principal
   ❒ Business representatives

4. Who has **most** influenced your career decision?

   ❒ Teachers
   ❒ Counselors
   ❒ Family
   ❒ Friends
   ❒ Other _____

5. What *Career Pathway* did you choose?

   ❒ Arts/Communications/Humanities
   ❒ Business Systems
   ❒ Engineering/Industrial Systems
   ❒ _____
   ❒ _____
   ❒ Health Services
   ❒ Natural Resources
   ❒ Social/Human Services
   ❒ _____
   ❒ _____

6. Have you changed your *Career Pathway* choice?

   ❒ Yes ❒ No

   If yes, why? (check all that apply)

   ❒ My interests changed.
   ❒ I was talked into something else by family, friends.
   ❒ The working conditions are unsuitable for me (e.g., hours, outside/inside work)
   ❒ The jobs in this *Pathway* don't pay enough.
   ❒ There aren't enough job openings in this *Pathway*.
   ❒ Other _____

Answer the following statements by checking the appropriate response. We want to find out whether *Career Pathways* have been useful to you.

7.	My *Career Pathway* is helping me define my career goals.	❒ Agree	❒ Disagree	❒ Undecided
8.	My *Career Pathway* matches my interests, abilities, and goals.	❒ Agree	❒ Disagree	❒ Undecided
9.	My *Career Pathway* is helping me pursue my career goals.	❒ Agree	❒ Disagree	❒ Undecided
10.	The coursework related to my *Career Pathway* is challenging and helpful.	❒ Agree	❒ Disagree	❒ Undecided
11.	My *Career Pathway* is not providing a good foundation for my future career goals.	❒ Agree	❒ Disagree	❒ Undecided
12.	I am developing more interest in my chosen *Career Pathway* as I go through school.	❒ Agree	❒ Disagree	❒ Undecided
13.	There is an obvious connection between my coursework and the *Career Pathway* I chose.	❒ Agree	❒ Disagree	❒ Undecided

14. Do you know what you're going to do after high school?

    ❒ Yes ❒ No

    If yes, what are your plans? (check all that apply)

    ❒ Attend community college.
    ❒ Attend technical school.
    ❒ Attend university.
    ❒ Go to work part-time.
    ❒ Go to work full-time.
    ❒ Enlist in the military.
    ❒ Other _____

15. Do you feel prepared to pursue these plans?

    ❒ Yes ❒ No

Teacher Survey

This survey is designed to gather information on the implementation of *Career Pathways* in your school and in your classroom.

Teachers and schools/districts have described many ways to design and implement the *Career Pathways* system. The following questions are related to your experience in initiating *Career Pathways*.

1. Were you involved in designing and implementing *Career Pathways* in your school/district?

   ❒ Yes ❒ No

2. Have you attended inservice activities on *Career Pathways*?

   ❒ Yes ❒ No

3. Did you organize materials (syllabi, lesson plans, learning activities, curricula) to support the *Career Pathways* system?

   ❒ Yes ❒ No

   If yes, which of the following did you do? (check all that apply)

   ❒ I used existing materials.

   ❒ I modified existing materials.

   ❒ I created new materials.
   ❒ Other _____

In designing and implementing *Career Pathways*…

4. Has your collaboration with *teaching* staff: ❒ increased ❒ decreased ❒ remained the same?

   Comments: _____

   _____

5. Has your collaboration with *administrative* staff: ❒ increased ❒ decreased ❒ remained the same?

   Comments: _____

   _____

6. Has your collaboration with *counseling/guidance* staff: ❒ increased ❒ decreased ❒ remained the same?

   Comments: _____

   _____

7. Has your collaboration with *business/community* partners: ❒ increased ❒ decreased ❒ remained the same?

   Comments: _____

   _____

8. Is there long-term support for *Career Pathways* (e.g., administratively, financially) in your school/district?

   ❒ Yes

   ❒ No

   ❒ Don't Know

The following assess your perception of the importance of *Career Pathways* for students. Please identify the importance you place on students having the following experiences. Do not assess whether your students have access to these activities or whether you coordinate them, but whether they are important for students.

9.	Completing a career interest inventory	Very important Somewhat important Not important	❒ ❒ ❒
10.	Updating career interest inventory each year	Very important Somewhat important Not important	❒ ❒ ❒
11.	Completing an educational plan	Very important Somewhat important Not important	❒ ❒ ❒
12.	Completing a career plan	Very important Somewhat important Not important	❒ ❒ ❒

Please check the grade level(s) at which you currently teach. (Please check all that apply.)

❒ Elementary
❒ Junior High
❒ High

Section IV. Job Outlook

A picture of employment opportunities will help students take charge of their futures. They will develop a vision of what they want to do and how they need to prepare for, secure, and keep the jobs they want. This same information will help school administrators, teachers, and counselors identify the skills that are needed and design curriculums that meet employers' needs.

The following labor market information is based on economic studies conducted by the U.S. Department of Labor, Bureau of Labor Statistics and the Arizona Department of Economic Security, Research Administration. This information is presented in two parts. The first part relates to national employment projections. The second part relates to Arizona employment projections.

National Employment Projections

1. ***Educational requirements for most new jobs will increase.*** Over the past 10 years the median of years in school has increased from 12.8 years to 13.5 years. This means that holding only a high school diploma may make it difficult to find and keep a job in the future.

Table 1. Educational Requirements

Education	Current Jobs	New Jobs
8 years or less	6%	4%
1-3 years of high school	12%	10%
4 years of high school	40%	35%
1-3 years of college	20%	22%
4 years or more of college	22%	30%
Median years of school	12.8	13.5

Source: U.S. Department of Labor, Bureau of Labor Statistics, 1996

New jobs will be unevenly distributed across major industrial and occupational groups due to the restructuring of the economy and the increased education and training requirements for most jobs. Over 90 percent of the new jobs will be in the service-producing industries: legal, business, and healthcare. These jobs will be found at two ends of the job market: high paying jobs that will require high-level skills and low- paying jobs that will require few specialized skills.

2. ***The fastest growing occupations–which will require the highest level of education and skill– will be in executive, managerial, professional, and technical fields.*** In 1997 the most sought-after college graduates were those with degrees in computer science, finance, business administration, and marketing. Political science and psychology majors were sought for their "people skills" and "problem-solving" abilities.

3. ***The greatest growth in jobs will take place in service industries and occupations.*** Health and business will be the fastest growing service industries during this decade. Social, legal, engineering, and management services will also exhibit strong growth. Retail trade will be the second fastest growing industrial sector. The greatest growth occupations will require skills training and experience. Moving into one of these fields will require knowledge of the job qualifications, the nature of the work, and sources of employment.

4. ***The hot jobs–those offering excellent pay, advancement, and security–will be in science, engineering, computer technology, and health services.*** The highest demand and highest paying jobs will include biological scientist, physician, mechanical engineer, chemical engineer, computer scientist, computer engineer, materials engineer, and medical technologist. Demand also will be high for less well paying jobs such as special education teachers, personal and home care aides, home health aides, and physical therapists.

Figure 6. Where Are the Jobs?

Information Technology. This is the nation's largest industry. An estimated 1 million new computer-programming jobs will open in the next 9 years.

Home Health Care. Jobs for home health aides have doubled to more than 500,000 since 1989 and are expected to more than double again by 2005.

Petroleum Engineering. After more than a decade of layoffs in the oil industry, there is new demand for petroleum engineers, geologists, and geophysicists.

Entertainment. Demand for film and TV employees is expected to create 16,000 jobs in Los Angeles County this year. The work isn't steady, but the pay can be high: A top camera operator earns $4,000 a week, and a costume designer earns $4,200 a week.

Tables 2 through 4 show national projections through 2006 for the *occupations with the largest job growth projections*, *occupations with the fastest growing projections*, and *occupations with the highest paying and fastest-growing projections*. This information is based on a model which assumes continual, linear economic growth and, therefore, does not account for unexpected patterns of economic growth and decline. As such, this information offers the "best guesses" for the projected period.

Table 2. Occupations with Largest Projected Job Growth, 1996-2006
(ranked by total job openings)

Occupations	Total Job Openings	Percent Change	Education/Training Requirements
Cashiers	530,000	17	On-the-job training
Systems analysts	520,000	103	Bachelor's Degree
General managers, top executives	467,000	15	Work experience and bachelor's or higher
Registered nurse	411,000	21	Associate's Degree
Salespersons, retail	408,000	10	On-the-job training
Truck drivers	404,000	15	On-the-job training
Home health aides	378,000	76	On-the-job training
Teacher aides, educational assistants	370,000	38	On-the-job training
Nursing aides, orderlies, attendants	333,000	25	On-the-job training
Receptionists and information clerks	318,000	30	On-the-job training
Teachers, secondary	312,000	22	Bachelor's Degree
Child care workers	299,000	36	On-the-job training
Clerical supervisors, managers	262,000	19	Work experience
Database administrators, computer specialists, other computer scientists	249,000	118	Bachelor's Degree
Marketing and sales worker supervisors	246,000	11	Work experience
Maintenance repairers, general utility	246,000	18	On-the-job training
Food counter, fountain related workers	243,000	14	On-the-job training
Teachers, special education	241,000	59	Bachelor's Degree
Computer engineers	235,000	109	Bachelor's Degree
Food preparation workers	234,000	19	On-the-job training
Hand packers and packagers	222,000	23	On-the-job training
Guards	221,000	23	On-the-job training
General office clerks	215,000	7	On-the-job training
Waiters and waitresses	206,000	11	On-the-job training
Social workers	188,000	32	Bachelor's Degree
Adjustment clerks	183,000	46	On-the-job training
Cooks, short order, fast food	174,000	22	On-the-job training
Personal and home care aides	171,000	85	On-the-job training
Food service and lodging managers	168,000	28	Work experience
Medical assistants	166,000	74	On-the-job training

Source: U.S. Department of Labor, Bureau of Labor Statistics, 1998

Table 3. Fastest Growing Occupations, 1996-2006
(ranked by percent of change)

Occupations	Total Job Openings	Percent Change	Education/Training Requirements
Database administrators, computer specialists, other computer scientists	249,000	118	Bachelor's Degree
Computer engineers	235,000	109	Bachelor's Degree
Systems analysts	520,000	103	Bachelor's Degree
Personal and home care aides	171,000	85	On-the-job training
Physical and corrective therapy assistants/aides	66,000	79	On-the-job training
Home health aides	378,000	76	On-the-job training
Medial assistants	166,000	74	On-the-job training
Desktop publishing specialists	22,000	74	On-the-job training
Physical therapists	81,000	71	Bachelor's Degree
Occupational therapy assistants/aides	11,000	69	On-the-job training
Teachers, special education	241,000	59	Bachelor's Degree
Human service workers	98,000	55	On-the-job training
Data processing equipment repairers	42,000	52	Postsecondary vocational training
Medical records technicians	44,000	51	Associate's Degree
Speech-language pathologists and audiologists	44,000	51	Master's Degree
Dental hygienists	64,000	48	Associate's Degree
Amusement and recreation attendants	138,000	48	On-the-job training
Physician assistants	30,000	47	Bachelor's Degree
Respiratory therapists	37,000	40	Associate's Degree
Adjustment clerks	183,000	46	On-the-job training
Engineering, science, and computer systems managers	155,000	45	Work experience and bachelor's Degree or higher
Emergency medical technicians	67,000	45	Postsecondary vocational training
Manicurists	19,000	45	Postsecondary vocational training
Bill and account collectors	112,000	42	On-the-job training
Residential counselors	74,000	41	Bachelor's Degree
Instructors, coaches, sports and physical trainers	123,000	41	On-the-job training
Dental assistants	77,000	38	On-the-job training
Securities and financial services sales workers	100,000	38	Bachelor's Degree

Source: U.S. Department of Labor, Bureau of Labor Statistics, 1998

Table 4. High-Paying, Fast-Growing Occupations, 1994-2005

Occupations	Weekly Earnings	Total Job Openings	Percent Change	Education/Training Requirements
Lawyer	$1,131	268,000	28	Bachelor's Degree or higher
Physicians	$1,040	205,000	22	Bachelor's Degree or higher
Systems analysts	$845	481,000	92	Bachelor's Degree or higher
Computer engineers	$845	191,000	90	Bachelor's Degree or higher
Management analysts	$789	109,000	35	Bachelor's Degree or higher
Residential counselors	$694	158,000	76	Bachelor's Degree or higher
Teachers, secondary	$690	782,000	29	Bachelor's Degree or higher
Registered Nurses	$685	740,000	25	Associate's Degree
Teachers, special education	$647	262,000	53	Bachelor's Degree or higher
Writers, technical writers, editors	$633	111,000	22	Bachelor's Degree or higher
Police patrol officers	$632	271,000	28	On-the-job training
Personnel, training, labor relations specialists	$611	129,000	22	Bachelor's Degree or higher
Designers (except interior)	$590	113,000	32	Bachelor's Degree or higher
Artists and commercial artists	$575	117,000	23	Bachelor's Degree or higher
Instructors, coaches, sports and physical trainers	$530	119,000	35	On-the-job training
Instructors, adult (nonvocational)	$530	107,000	29	On-the-job training
Teachers and instructors, vocational education	$530	104,000	27	On-the-job training
Social workers	$506	288,000	34	Bachelor's Degree or higher
Heating, air-conditioning, refrigeration mechanics	$497	125,000	29	On-the-job training
Correctional officers	$485	194,000	51	On-the-job training
Licensed practical nurses	$450	341,000	28	Postsecondary Vocational Training

Source: U.S. Department of Labor, Bureau of Labor Statistics, 1996

Arizona Employment Projections

Over the last two decades, Arizona has experienced strong growth in professional, technical, and service occupations and slower growth in production and maintenance jobs. This trend is consistent with the observation that occupations requiring more education are generally growing faster than those with fewer education requirements. However, when the number of new jobs is considered rather than the rate of employment growth, occupations requiring less education continue to dominate.

The following information summarizes the employment projections for the period 1994-2005. It is organized by the eight occupational categories that make up the state's economic base.

Table 6. Arizona's Employment Projections

Major Occupational Categories	Percent Growth
1. Professional/Paraprofessional/Technical	22.4
2. Services	17.4
3. Precision Production/Craft	14.6
4. Sales	13.5
5. Operators/Fabricators/Laborers	10.5
6. Executive/Managerial	7.8
7. Administrative Support	2.4
8. Agriculture/Forestry/Fishing	1.5

Source: Arizona Occupational Employment Forecast, 1994-2005, 1997

1. ***Professional, Paraprofessional, and Technical Occupations.*** Retail sales clerks, cashiers, waiters and waitresses, managers, and general office clerks will make up the largest number of new positions. The fastest growing occupations include computer engineers and scientists, personal and home health aides, amusement and recreation attendants, economists, and market analysts. Health services will experience strong demands for registered nurses; licensed practical nurses; physical, occupational, and respiratory therapists; speech pathologists; audiologists; medical records technicians; and dental hygienists. Jobs will also increase for elementary, secondary, and special education teachers. New jobs for electrical and electronic engineers will focus on the demand for computers, communications equipment, and military electronics; electrical and electronic goods; and more efficient manufacturing processes. Substantial growth in the business services industries will be generated by engineering, legal, and management consulting occupations.

2. ***Service Occupations.*** The food-service occupations will provide the bulk of job opportunities in this area, with numerous new jobs available in schools, nursing homes, and residential-care facilities. Among the personal services, hairdressers, hair stylists, and cosmetologists will dominate. There will also be a strong demand for

janitors and cleaners by companies supplying building maintenance services. Among the health occupations, psychiatric aides will be in demand due to the continued support for mental health care; an emphasis on rehabilitation and the needs of an aging population will increase the demand for nursing aides, especially in nursing homes and other long-term facilities; and home health aides will be needed to attend an aging population and the chronically ill. In response to the rise in labor force participation among women, the demand for child-care workers will increase. Guards and other security workers will experience a substantial increase. A robust economy will continue to support travel and tourism.

3. ***Precision Production, Craft, and Repair Occupations.*** The need for general maintenance repairers and construction trades workers (carpenters, electricians) will increase over the projected period, but these workers will account for a diminishing share of the total employment. The strongest growth will take place in the construction industry, with the greatest demand for carpenters and electricians. The number of automobile mechanics will increase, with most new jobs in automobile repair shops and dealerships.

4. ***Marketing and Sales Occupations.*** Marketing and sales occupations account for only 12 percent of the total employment in Arizona. Of these occupations, retail sales has experienced the largest growth rate. Other occupations that will dominate in this area are sales and marketing supervisors, cashiers, and sales representatives. Because turnover is high among the sales occupations, replacement needs will create a significant number of job openings.

5. ***Operators, Fabricators, and Laborers.*** Employment of truck drivers is expected to expand 54 percent between 1994 and 2005. Otherwise, employment in this category will continue to be suppressed.

6. ***Executive and Managerial Occupations.*** General managers and top executives–mostly found in small firms–account for 7 percent of Arizona's wage earners. Over the projected period, the rate of expansion will vary with the strongest increases in health and business services. Also, occupations in this category will continue to be affected by workplace restructuring.

7. ***Clerical and Administrative Support Occupations.*** The clerical category will experience the slowest growth due to the impact of technology. Jobs for clerical workers will be concentrated in the finance, insurance, and real estate industry, especially banks and credit agencies. More opportunities than any other clerical occupation will be available for general office clerks. The demand for bookkeeping, accounting, and auditing clerks will remain strong, especially for workers with basic computer skills and familiarity with office machines. Skilled secretaries will also remain in demand since many of their functions cannot be automated. There will be a strong demand for teacher aides in the coming years.

8. ***Agriculture, Forestry, and Fishing Related Occupations.*** Current data covers agricultural services but not agricultural production, forestry, and fishing.

Agriculture-related occupations can be found in nearly all industries. Of these, gardeners and grounds-keepers account for 35 percent of the total number of workers and are most prevalent in real estate, amusement, recreation, government, and lodging industries.

The 35 occupations listed below have the best employment potential for the projected period.

Table 7. Occupations Ranked by Projected Growth Rates, 1994-2005

Occupations	1994	2005	Ann. Percent of Growth
Computer Engineers	3,727	10,490	16.5
Personal and Home Care Aides	761	2,052	15.4
Amusement/Recreation Attendants	4,162	10,852	14.6
Market Analysts and Economist	626	1,593	14.0
Surveying and Mapping Scientists	892	2,214	13.4
Ushers, Lobby Attendants, and Ticket Takers	922	2,260	13.1
Detectives, Exc. Public	1,245	2,966	12.5
Physical/Correctional Therapy Assistants	1,258	2,959	12.2
Physical Therapists	1,605	3,719	11.9
Systems Analysts	5,711	13,007	11.6
Heat, A/C, Refrigeration Mechanics	4,100	9,333	11.6
Data Processing Equipment Repairers	1,371	3,089	11.3
Computer Support Specialists	810	1,812	11.2
Nursery Workers	1,821	4,001	10.8
Residential Counselors	1,724	3,778	10.8
Home Health Aides	5,136	10,977	10.3
Architects, Exc. Landscape/Marine	1,410	3,020	10.3
Human Services Workers	3,605	7,654	10.2
Manicurists	1,260	2,664	10.1
Counter and Rental Clerks	6,118	12,620	9.6
Management Analysts	2,994	6,166	9.6
Guards	14,616	29,952	9.5
Medical Assistants	4,273	8,749	9.5
Teachers, Preschool/Kindergarten	3,907	7,921	9.3
Pest Controllers and Assistants	1,796	3,643	9.3
Instructors and Coaches/Sports	5,796	11,590	9.0
Medical Records Technicians	1,649	3,273	8.9
Civil Engineers, Incl. Traffic	2,921	5,710	8.6
Civil Engineering Technicians	1,161	2,254	8.5
Teacher Aides and Education Assistants	3,550	6,808	8.3
Demonstrators, Promoters, Models	1,555	2,976	8.3
Telemarketers/Door-to-Door Sales	10,213	19,476	8.2
Designers, Exc. Interior Designers	4,286	8,153	8.2
Teachers, Special Education	2,333	4,397	8.0

Source: Arizona Occupational Employment Forecast, 1994-2005, 1997

GSPED: Predicting Arizona's Work Force Needs

In Arizona, as in other parts of the U.S., quality jobs are being created faster than employers can find qualified workers. If Arizona is unable to supply the workers that businesses need, they will seek employees from outside the state and/or they will locate elsewhere.

In the early 1990s, the Governor's Strategic Partnership for Economic Development (GSPED) implemented a statewide plan to address economic growth and quality of life issues. This plan identified 11 industry clusters, each of which is sustained by common support systems and infrastructures that attract and maintain a healthy economic environment. These clusters become a powerful magnet for businesses to locate

Figure 7. GSPED Clusters

Industry clusters are a concentration of businesses that relate to each other as buyers-suppliers, competitors, or partners. Employment in a cluster is more concentrated in the region than the national average, and the cluster is an existing or emerging area of specialization. It is of a significant size, or if new, has an above average growth rate compared to that of the U.S. as a whole. Each cluster is sustained by building blocks, or *foundations*, which provide the support and infrastructure–a well-educated population, capital resources, information networks, and transportation systems–that allows businesses to run.

in an area; they create large, diverse pools of experienced workers; they attract suppliers; and they foster a competitiveness that stimulates growth. Teachers and counselors can use these clusters to link school programs to economic development activities and work force needs in the state. Following are descriptions of the 11 GSPED clusters.

- The **Bioindustry Cluster** contains businesses that create and provide products and services which characterize such life science activities as medical devices, pharmaceuticals, research, and testing. (This cluster does not include health care delivery services.)

- The **Environmental Technology Cluster** contains businesses that create and provide products and services which utilize technology to monitor, eliminate, control, treat, and prevent pollution, and to conserve and restore natural resources.

- The **Food, Fiber, and Natural Products Cluster** contains businesses that grow, process, and distribute plant and animal products including edible crops, wine, cotton, livestock, processed foods, and forestry products.

- The **High-Tech Industry Cluster** contains businesses that produce products and systems for commercial aeronautics, space markets, and the military. Industries include aircraft and aircraft parts, aerospace instruments, missile systems, defense communications and detection systems, materials, and component suppliers to other manufacturers. Computer industries, semiconductors, electronic equipment industries and telecommunications are also included in this cluster.

- The **Minerals and Mining Cluster** contains businesses that develop, process, and supply natural mineral resources and energy.

- The **Optics Cluster** contains businesses that develop optical science and engineering applications for the health, space, military, manufacturing, and environmental science industries. This cluster is strongly allied with university research programs.

- The **Plastics Cluster** contains businesses that manufacture, process, and/or supply the following: color and additive concentrates; compounds; reinforced plastics/composites; degradable polymers; compostable polymers, epoxy resin formulators; fluoropolymers; foamed polystyrene; injection, compression, blow, rotational, or other transfer molding processes; moldmakers; naphthalate polymers, or monomers; organic peroxides; phenolic resins, and/or phenolic molding compounds. Equipment manufacturers and companies that supply such raw materials as graphite, resin, alloys, and fiber glass are also included.

- The **Senior Living Cluster** contains businesses that provide medical, financial, legal, real estate, and accounting services for retirees.

- The **Software Cluster** contains businesses that develop, market, or distribute software products for business, scientific, and personal use. This includes products that work on a wide variety of hardware platforms including consumer electronics, personal computers, workstations, minicomputers, and mainframe computers.

- The **Tourism Cluster** contains businesses that create and provide recreational and visitor facilities and services built around Arizona's natural beauty. This includes cultural, historical and natural attractions, amusement parks, eating/drinking establishments, lodging and resort facilities, film production, entertainment services, sports and recreational attractions, and traveler and transportation services.

- The **Transportation and Distribution Cluster** contains businesses that create and provide physical infrastructure, capital goods and services needed to carry passengers and deliver products locally, regionally and globally via air, rail, roadway, and pipeline.

Summary

One thing that labor market information points out is that job opportunities will grow and decline at different rates for different occupations and industries. At the same time, the nature of many jobs will change within organizations. As industries acquire advanced technology, automate operations, improve managerial systems, and downsize, fewer high paying jobs will be available and career advancement will be increasingly limited.

The fastest growing fields are not necessarily the best ones to enter. The best job and career depends on the individual's skills, interests, and work and lifestyle. Money is only one of many determiners. A job may pay well, but it also may be stressful and insecure. A job should be rewarding in terms of one's own criteria and priorities.

Finally, one must be prepared to make job and career changes, acquire appropriate job performance skills, and even relocate to where the jobs are. Most important to success, however, is developing the best job search skills possible. This includes knowing about and using the numerous resources that are available.

Resources Used in This Section

U.S. Department of Labor, Bureau of Labor Statistics (January 1998). Occupational Projections and Training Data (Bulletin 2501). Washington, DC: U.S. Government Printing Office.

U.S. Department of Labor, Bureau of Labor Statistics (February 1998). Employment Outlook, 1996-2006: A Summary of BLS Projections (Bulletin 2502). Washington, DC: U.S. Government Printing Office.

U.S. Department of Labor, Bureau of Labor Statistics (Spring 1996). Occupational Outlook Quarterly. Washington, DC: U.S. Government Printing Office.

Arizona Department of Economic Security, Research Administration (September 1996). Arizona Job Seekers Guide. Phoenix, AZ: Arizona Department of Economic Security.

Arizona Department of Economic Security, Research Administration (Fall 1997). Arizona Economic Trends. Phoenix, AZ: Arizona Department of Economic Security.

Section V. Student Career Interest Assessments

There are numerous quizzes, inventories, and checklists that teachers and counselors can use to help students identify their career interests and choose a career pathway. Following are three examples of career interest assessments for students in grades 3-12:

Career Pathways Inventory-Elementary Students (pages 36-47). This inventory is used with students in grades 3-5 as a follow up to the career awareness activities that take place in the primary grades. This inventory was developed through the Center for Educational Development in Tucson under U.S. Department of Education grant R215S50053. It is based on the National Standards for School Counseling Programs, the National Occupational Information Coordinating Committee' guidelines for a competency-based approach to career development, and Arizona's Comprehensive Competency-Based Guidance Program. For permission to use any of this copyrighted material, please contact the Center for Educational Development at 1-800-749-8065.

Career Pathways Survey–Middle School Students (pages 48-50). This survey is designed to help students in grades 6-8 determine which career pathways fits them best. It originally appeared as part a four-part process entitled *How Do I Decide Which Career Pathway Is for Me?* The original assessment covers identifying interests, talents, and abilities; gathering career information; making an initial career pathways selection; and completing a course plan and individual career pathways plan. It can be found in its entirety in *Career Pathways: A Guide for Students and Families* which is described in Section IX.

Career Pathways Inventory–High School Students (pages 51-52). This inventory was developed by the Mohave Union High School District to assist high school students with their course selection. It appears as part of their high school course catalog.

Career Pathways Inventory–Elementary Students

Directions for Sessions One and Two

Each student should have a pencil; a green, red, and yellow crayon; a survey, a graph sheet, and a blank piece of paper to cover the rows in the survey.

The counselor will say to students:

Use your pencil to print your name in the space provided. When you are finished, put you pencil down. It is important not to work ahead because you might misinterpret the pictures in the survey.

Look at the first picture in row 1. It is a picture of an actor and a dancer. Would a performing career interest you? (Hint: When describing pictures, describe the skills involved rather than the specific occupation.)

> If your answer is yes, mark the "thumbs up" box with your green crayon. (Green means "yes - go for it!")
> If your answer is no, mark the "thumbs down" box with your red crayon. (Red means "no way!")
> If your answer is maybe, mark the "thumbs to the side" box with your yellow crayon. (Yellow means "possibly.")

Moving across the row to the right, look at picture B. This is a picture of an office phone like a secretary would use. If working in a career like this would interest you, mark the box with a green crayon. If your answer is no, mark the thumbs down box with your red crayon. If your answer is maybe, mark the thumbs to the side with your yellow crayon.

(The counselor continues this process with each picture, giving as much explanation about the career as students need. Transparencies may be helpful.)

1C - Health Attendant
1D - Truck Driver
1E - Pet Groomer
1F - Fast Food Worker

2A - Floral Worker
2B - Retail Salesperson
2C - Personal/Home Health Aide
2D - Machine Operator
2E - Parks Maintenance/Groundskeeper
2F - Teacher Aide

3A - Artist
3B - Bank Teller
3C - Dental Hygienist
3D - Auto Mechanic
3E - Horse Trainer
3F - Law Enforcement

4A - Video Producer
4B - Travel Agent
4C - Medical Technician
4D - Plumber
4E - Pest Control
4F - Cosmetologist

5A - Professional Athlete
5B - Restaurant/Hotel Manager
5C - Veterinarian
5D - Architect
5E - Forest Ranger
5F - Lawyer

6A - Meteorologist
6B - Accountant
6C - Doctor/Nurse
6D - Air Traffic Controller
6E - Marine Biologist
6F - Teacher

Check to be sure the student has marked only one box under each picture with green, red, or yellow. Distribute one graph sheet to each student. (Either you or the students should fold the bottom of the graph sheet to cover the Career Pathways information.)

The counselor will say to students:

(Transparencies may be helpful to explain this task.)

Slide the graph sheet under the bottom edge of the picture inventory sheet. Be careful to keep the edges straight. If done correctly, the hand positions on the graph sheet should be lined up below the hand positions on row 6.

Take your blank sheet of paper and carefully lay it on top of the picture inventory sheet so you can see only the thumbs up positions in column A in all 6 rows. Count the number of green thumbs up you have marked in column A. With your pencil write the total number marked in row 7 under the thumbs up. Zero is OK.

Slide the paper to the right so you can see all the thumbs down in column A. Count the number of red thumbs down you have marked in column A. With your pencil write the total number in row 7 under the thumbs down.

Slide the paper to the right so you can see all the thumbs to the side in column A. Count the number of yellow thumbs to the side you have marked in column A. With your pencil write the total number marked in row 7 under the thumbs to the side.

(Repeat the same instructions for columns B, C, D, E, and F. Students should have a number entered in each box. If there are no selections, they should enter a "0.")

The counselor will say to students:

Put the picture inventory underneath the graph sheet. It is not needed for the next task.

To create the graph, the counselor will say to students:

Use your blank sheet of paper to cover all the boxes except the boxes under the thumbs up in column A.

Look at the number below the thumbs up in 7A. With your green crayon, begin at the bottom of the graph and color in boxes to equal that number. For example, if your total was 2, you would color in the bottom 2 boxes in the graph. If you had 0, you do not color in any boxes.

Slide the paper to the right to show the total of the thumbs to the slide in 7A. With your yellow crayon, you will begin at the bottom of the graph and color in boxes to equal that number. Remember, if you have 0 you won't color in any boxes.

Count to be sure you have a total of 6 boxes colored in graph A.

(The counselor repeats the same instructions for columns B, C, D, E, and F.)

The graphs shows which pathways are of interest to you. Find the graph that shows the most green choices. Circle the letter. At the bottom half of the graph sheet, find the career pathway that matches that letter. Circle it. Now read the information about the pathway you have chosen.

Directions for Sessions Three and Four

Prior to class, prepare six posters. Put one career pathway title on each poster. Cut apart the occupation sheets pages 40-45 and group all the number ones from each sheet together, all the number twos, etc.

In class, work with the students to define "categories." Examples might be grocery stores, types of cars, names of vegetables, etc. Continue until students understand the concept of categories. Display the six posters. Distribute only the number one strips and number two strips to the students. Explain that they are going to categorize jobs into career clusters. One at a time, have students read the strip and place it on the appropriate poster. Have each student explain why he/she chose a particular pathway. Students should start to understand the concept of career pathways versus individual jobs.

Group students by their pathway. Use the individual pathway sheets to expand the understanding of career pathways. Explain to students that–

- 1 cap and diploma = a high school diploma or GED; entry-level jobs
- 2 caps and diplomas = a certificate or associate degree from a technical college or community college; skilled jobs
- 3 caps and diplomas = a baccalaureate degree and beyond from a 4-year college or university; professional jobs

Have students work in groups to brainstorm other careers and educational requirements that fit in their pathway. They can also create posters showing the variety of careers in their pathway, display their posters, and share information about their posters to the class.

A helpful resource is the *Children's Occupational Outlook Handbook* (To order a copy, call 1-800-525-5626).

Career Pathways Survey–Middle School

Read each of the following descriptions. Rank them from 1 (most like you) to 6 (least like you) in the order that best describes you. Use each number only once.

1	2	3	4	5	6
most like you					least like you

_____ A. I like to write stories, draw, or play music in my spare time. A lot of people tell me I'm very creative and have a good imagination. If I could have any job, it would be one where I could use my creativity to design things or entertain people.

_____ B. I enjoy arranging things – everything from a party to a research paper. A lot of people tell me I'm very organized and tidy. If I could have any job, it would be one where I could give or take clear directions and work on specific tasks from beginning to end.

_____ C. I spend my spare time fixing things around the house or taking appliances apart to find out how they work. People tell me I'm mechanically inclined and work well with my hands. If I could have any job, it would be one where I could use tools to build or repair things.

_____ D. I am really interested in biology and in how the body works. People tell me I'm calm and patient and can make good decisions. If I could have any job, it would be one where I could help people or animals get better and stay well.

_____ E. I really enjoy doing outside activities and studying plants and animals. People tell me I'm practical and good at solving problems. If I could have any job, it would be one where I could be independent and work outdoors or in a laboratory.

_____ F. I like being with people and talking to them about their interests. People tell me I'm outgoing and caring. If I could have any job, it would be one where I could work with groups and individuals to make things better for other people.

Turn the page to find out which career pathway fits you best. For example, if you marked letter A above with a l (most like you), read about the pathway on the next page marked with an A.

Key to Career Pathways Survey

A = Arts/Communications/Humanities

Occupations in this career pathway are related to the visual, craft, and performing arts. You may be interested in a career in music, journalism/ broadcasting, graphic design, interior design, or printing.

B = Business Systems

Occupations in this career pathway are related to business operations, administration, and management; and marketing and sales. You may be interested in a career in accounting, financial management, administrative support, or sales.

C = Engineering/Industrial Systems

Occupations in this career pathway are related to the technology necessary to design, develop, install, and maintain electrical, mechanical, and structural systems. You may be interested in a career in the building trades, architecture, engineering, or automotive services.

D = Health Services

Occupations in this career pathway are related to the diagnosis and treatment of diseases, disorders, and injuries; laboratory technology; nursing; and therapy. You may be interested in a career in medical/dental assisting, veterinary medicine, nursing, or physical therapy.

E = Natural Resources

Occupations in this career pathway are related to the natural sciences, agriculture, and the environment. You may be interested in a career in agricultural operations/farm management, wildlife biology, or forestry management.

F = Social/Human Services

Occupations in this career pathway are related to hospitality, personal and customer services, social services, education, legal services, and protective services. You may be interested in a career in education, law, social service, or culinary arts.

Based on this survey and what you know about yourself, answer the following questions:

1. Which career pathway do you think fits you best?

2. Why do you think this pathway is a good choice for you?

Discuss this information with your teachers, counselor, and family members. Ask them to share what they see as your strengths and talents. It is also helpful to ask them to share information they have about careers and the world of work. There are a variety of other career interest instruments. Your counselor will be glad to help you compare information from other interest inventories with the six career pathways.

Career Pathways Inventory–High School Students

Having a hard time deciding what you "want to be when you grow up?" Here's a quick, easy way to narrow your choices. Place a check to the left of any job you think you might like to do. When you're finished, add the checks in each pathway and find out which has the most.

Arts/Communications/ Humanities	Business Systems	Engineering/Industrial Systems
_____ Actor	_____ Accountant	_____ Aerospace Engineer
_____ Artist/Painter	_____ Bank Teller	_____ Aircraft Mechanic
_____ Camera Operator	_____ Bookkeeper	_____ Arc & Gas Welder
_____ Cartoonist	_____ Cashier	_____ Architect
_____ Disc Jockey	_____ Clerk Typist	_____ Auto Body Repairer
_____ Editor	_____ Credit Authorizer	_____ Automotive Mechanic
_____ Fashion Designer	_____ Data Entry Clerk	_____ Brick/Stone Mason
_____ Film Developer	_____ Estate Planner	_____ Building Maintenance
_____ Film Producer	_____ Financial Aid Counselor	_____ Cabinetmaker
_____ Graphic Arts Technician	_____ Investment Broker	_____ Carpenter
_____ Movie Director	_____ Loan Officer	_____ Chemical Engineer
_____ Musician	_____ Payroll Clerk	_____ Civil Engineer
_____ News Reporter	_____ Postal Worker	_____ Electrician
_____ Offset Printing Operator	_____ Purchasing Agent	_____ Firefighter
_____ Photographer	_____ Real Estate Agent	_____ Heavy Duty Truck Maint.
_____ Playwright	_____ Real Estate Appraiser	_____ Heavy Equipment Operator
_____ Radio/TV Announcer	_____ Receptionist	_____ Housekeeping
_____ Recording Engineer	_____ Retail/Wholesale Buyer	_____ Building Inspector
_____ Sculptor	_____ Salesperson	_____ Machinist
_____ Sound Mixer	_____ Secretary	_____ Plumber
_____ Stage Manager	_____ Statistician	_____ Repair Estimator
_____ Story Editor	_____ Store Manager	_____ Robotics Technician
_____ Typesetter	_____ Tax Specialist	_____ Sheet Metal Worker
_____ Vocalist/Singer	_____ Travel and Tourism Agent	_____ Surveyor
_____ Writer	_____ Word Processor	_____ Upholsterer
_____ **Total for this Pathway**	_____ **Total for this Pathway**	_____ **Total for this Pathway**

Health Services	Natural Resources	Social/Human Services
_____ Athletic Trainer	_____ Agronomist	_____ Cake Decorator
_____ Audiologist (hearing)	_____ Botanist	_____ Caterer
_____ Chiropractor	_____ Dog Groomer	_____ Chef
_____ Dental Hygienist	_____ Environmental Analyst	_____ Child Care Worker
_____ Dentist	_____ Farmer/Rancher	_____ Clothing Buyer
_____ Doctor's Office Assistant	_____ Fiber Technologist	_____ Coach
_____ EMT/Paramedic	_____ Fire Ranger	_____ Cosmetologist
_____ Home Health Aide	_____ Fish and Game Warden	_____ Counselor
_____ Laboratory Technician	_____ Fish Hatchery Technician	_____ Detective
_____ Medical Records Consult.	_____ Fisherman	_____ Fashion Designer
_____ Midwife	_____ Florist	_____ Fire Inspector
_____ Natural Remedy Spec.	_____ Forest Ecologist	_____ Hair Stylist
_____ Nurse	_____ Forester	_____ Head Host/Hostess
_____ Nurse Aide/Orderly	_____ Geneticist	_____ Interior Designer
_____ Occupational Therapist	_____ Geologist	_____ Librarian
_____ Ophthalmologist (eyes)	_____ Greenhouse Technician	_____ Manicurist
_____ Pharmacist	_____ Greenskeeper	_____ Minister/Priest/Rabbi
_____ Physical Therapist	_____ Horse Trainer	_____ Paralegal
_____ Physician	_____ Landscaper	_____ Parole/Probation Officer
_____ Physician's Assistant	_____ Logger	_____ Police Officer
_____ Psychiatrist	_____ Marine Biologist	_____ Psychologist
_____ Radiology Technician	_____ Nursery (plant) Manager	_____ School Principal
_____ Respiratory Technician	_____ Smoke Jumper	_____ Tailor
_____ Surgical Assistant	_____ Soil Conservationist	_____ Teacher
_____ Veterinarian	_____ Tree Surgeon	_____ Waiter/Waitress
_____ **Total for this Pathway**	_____ **Total for this Pathway**	_____ **Total for this Pathway**

Discuss this information with adult family members and friends. Ask them to share what they see as your strengths and talents. Also talk to your counselor or teachers. This inventory is only designed to give you a general idea of how you may wish to direct your career training. There is no claim as to its statistical validity.

Section VI. Student Career Plans

The career plan is an important part of the career pathways. It is the "blueprint" for a student's education and training. The career plan may include such information as the student's career pathway and specific career interest, academic and vocational courses, extra-curricular activities, work-based learning experiences, and plans beyond high school. There should also be a place for the student's signature, his or her parent or guardian's signature, and the counselor or student advisor's signature. As students acquire a better understanding of their career goals, they should review their career plans and make changes that will help them meet their goals. The information below is provided for each of the six career pathways:

- An introduction to the pathway which includes studies that could be pursued, places people might work, and skills and personality traits people in the pathway have in common.

- A chart showing examples of occupations at three different levels of education/ training: (1) high school diploma, on-the-job training, and/or related work experience; (2) technical training, community college, and/or related work experience; and (3) specialized schools, community college, university, and/or related work experience. Major employers in Arizona are listed as the GSPED clusters. (See Section IV for definitions of these clusters.)

- A list of postsecondary options available to high school graduates, including examples of postsecondary programs of study provided by community colleges, trade and technical schools, private colleges, and universities.

- Three sample career plans* that identify academic and vocational courses, extra-curricular activities, work-based learning experiences, and plans beyond high school.

  * The chart below was used to determine the graduation credits for the sample career plans. A school's/district's requirements may differ slightly from what is shown here.

High School	**Vocational Emphasis**	**College Prep**
English - 4	English - 4	English - 4
Math - 4	Math - 4	Math - 4
Science - 3	Science - 3	Science - 3
Social Science - 3	Social Science - 3	Social Science - 3
Physical Ed/Health - 1	Physical Ed/Health - 1	Physical Ed/Health - 1
Fine Arts or Vocational - 1	Vocational Courses - 6	Foreign Language - 2
Computers - 1	Computers - 1	Fine Arts or Vocational- 3
Electives - 8	Electives - 3	Computers - 1
		Electives - 4

The following information is only an example of the kind of information and format that may be used to illustrate the career pathways and career plans.

The Arts, Communications, and Humanities Career Pathway

What is the Arts, Communications, and Humanities Career Pathway?

The field of arts, communications, and humanities adds quality and richness to all parts of our society. Students who select this pathway could pursue studies in architecture, creative writing, film and cinema studies, fine arts, graphic design and production, journalism, foreign languages, radio and television broadcasting, advertising, and public relations. They could work for corporations, record companies, television stations, magazines, newspapers, book publishers, advertising agencies, public relations firms, entertainment companies, and run their own businesses.

What skills and personality traits do people in this pathway have in common?

- Creativity
- Originality
- Persistence
- Self-motivation
- Good oral and/or written communication skills
- Drawing and illustration skills
- Esthetic and spatial skills
- Computer skills
- Physical and/or manual dexterity
- Ease and clarity in expressing ideas
- Ability to translate design ideas into realistic implementation
- Ability to set goals and work toward their accomplishment
- Ability to deal with pressure
- Ability to withstand disappointment and rejection

WHAT and *WHERE* are the jobs in Arizona?

THE ARTS, COMMUNICATIONS, AND HUMANITIES CAREER PATHWAY				MAJOR EMPLOYERS
If your education and training is . . .	**High School Diploma, On-the-Job Training, and/or Related Work Experience–**	**Technical Training, Community College, and/or Related Work Experience–**	**Specialized Schools, Community College, University, and/or Related Work Experience–**	**GSPED Industry Clusters**
If your career interest is in Creating . . .	*. . . then these jobs are for you!* Artist Display Designer Floral Designer Illustrator Photographer	*. . . then these jobs are for you!* Cartoonist Computer Artist Fashion Designer Graphic Artist Craftsperson	*. . . then these jobs are for you!* Choreographer Desktop Publisher Fiction Writer Industrial Designer Landscape Architect	Bioindustry Environmental Technology Food, Fiber, and Natural Products
If your career interest is in Performing . . .	*. . . then these jobs are for you!* Actor/Actress Dancer Disc Jockey Model Makeup Artist	*. . . then these jobs are for you!* Actor/Actress Dancer Musician Singer Story Teller	*. . . then these jobs are for you!* Actor/Actress Dancer Musical Conductor Musician Translator/Interpreter	High-Tech Industry Minerals and Mining Optics
If your career interest is in Producing . . .	*. . . then these jobs are for you!* Advertising Copywriter Photographer Recording Engineer Television Engineer	*. . . then these jobs are for you!* Camera Operator Film Editor Journalist Technical Writer Television Technician	*. . . then these jobs are for you!* Darkroom Technician Instrument Repairer Lighting Technician Motion Picture Projectionist Sound Technician	Plastics and Composite Materials Senior Living Software Tourism
If your career interest is in Managing. . .	*. . . then these jobs are for you!* Art or Music Director Graphic Arts Manager Literary/Theatrical Agent Publisher	*. . . then these jobs are for you!* Dance Studio Manager Gallery Owner Stage Manager Theatre Manager	*. . . then these jobs are for you!* Choral/Instrumental Director Museum Curator Public Relations Manager Theatrical or Film Director	Transportation and Distribution *The jobs to the left may be available in one or more of the above clusters.*

What *postsecondary options* do high school graduates have?
What *postsecondary programs of study* are available in Arizona?

POSTSECONDARY OPTIONS	Examples of Programs of Study Provided by Community Colleges and Trade and Technical Schools	Examples of Programs of Study Provided by Colleges and Universities
Apprenticeship. An apprentice is a worker who progressively learns to become a journeyman, craftsman, or mechanic in a skilled trade. Generally this requires two or more years of training. The apprentice receives both on-the-job and classroom training on his/her way to becoming a journeyman. *Military Training*. A high school graduate may enlist in the military upon successful completion of ASVAB testing and a physical examination. Enlistment may be in the Air Force, Army, Navy, Marines, Coast Guard, or the Army or the Air Force National Guard. *Trade/Technical School*. Admission requirements vary, but programs range from occupationally specific to bachelor's degree programs. *Community College*. Arizona has 19 community colleges with programs that range from 2-year university transfer degrees to certificates of completion in occupationally specific programs which can be completed in 15-60 semester hours. *Private Colleges.* Admission requirements vary, but a variety of 4-year degree programs are offered. *State University Programs.* Arizona's three state universities–Arizona State University, Northern Arizona University, and the University of Arizona–have specific admission requirements and offer Bachelor, Masters, and Doctoral degrees in many fields.	Acting & Performing Arts Apparel Design & Construction Art/Applied Art Education Audio Recording & Production Biblical Studies Ceramics Commercial Art/Advertising Art Drama, Applied Drama, Production Graphic Arts, Camera Operator Graphic Arts, Platemaker Interior Design Jewelry Technology Journalism & Mass Communication Merchandising, Apparel/Interior MIDI (electrical composing) Music Business Professional Seamstress Radio Broadcasting Sculpture Sound Reinforcement Television/Video Production/ Broadcasting	Advertising African American Studies American Studies Art Education Art, Studio Broadcasting Choral Music, General Creative Writing Dance Fashion Merchandising Instrumental Music Interdisciplinary Arts/Performance Journalism Language: Asian, Chinese, French, German, Greek, Italian, or Spanish Media Arts Mexican American Studies Music Education Music History Music Theory & Composition Public Relations Russian & East European Studies Southeast Asian Studies Theatre

Career Plan #1

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Arts, Communications, and Humanities

3. CAREER INTEREST: Graphic design

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Algebra I Earth Science Health & Physical Education Introduction to Computers Information Technology I	**YEAR 10** English II Geometry Biology I U.S. History Art History Information Technology II	**EXTRA-CURRICULAR ACTIVITIES** Future Business Leaders of America (FBLA) School Newspaper Yearbook
YEAR 11 English III Algebra II Chemistry World History Graphic Communications I	**YEAR 12** English IV Advanced Math Economics Theatre Arts Graphic Communications II	**WORK-BASED LEARNING EXPERIENCES** Job shadowing experiences with the newspaper and a theatrical agency Internship in an advertising department of a corporation
PLANS BEYOND HIGH SCHOOL		
Find a job as an apprentice for the summer; study graphic computer design at the community college; research 4-year degree programs in fine arts and commercial arts		

Career Plan #2

1. **SIGNATURES:** _____ _____ _____
   Student Parent/Guardian Counselor/Advisor

2. **CAREER PATHWAY:** Arts, Communications, and Humanities

3. **CAREER INTEREST:** Photography

4. **EDUCATION/TRAINING PLAN:**

HIGH SCHOOL PLANS		
YEAR 9 English I Geometry Earth Science Health & Physical Education Introduction to Computers Information Technology I	**YEAR 10** English II Algebra I Biology I U.S. History Information Technology II French I	**EXTRA-CURRICULAR ACTIVITIES** Vocational Industrial Clubs of America (VICA) School Newspaper School Yearbook Photo Club
YEAR 11 English III Algebra II Biology II World History Photo Imaging I	**YEAR 12** English IV Advanced Math Psychology Creative Writing Photo Imaging II French II	**WORK-BASED LEARNING EXPERIENCES** Job shadowing experiences with fashion, commercial, and portrait photographers Internship with a commercial photographer
PLANS BEYOND HIGH SCHOOL		
Work as an apprentice in the photography industry; take writing courses at the community college or university; combine writing and photography skills and secure a job with major sports magazine		

Career Plan #3

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Arts, Communications, and Humanities

3. CAREER INTEREST: Fashion and accessory design

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Applied Math I Earth Science Health & Physical Education Introduction to Computers Human Services Technology I	**YEAR 10** English II Applied Math II Botany I U.S. History French I Human Services Technology II	**EXTRA-CURRICULAR ACTIVITIES** Students Together Rising In Vocational Education (STRIVE) Drama Club Art Club
YEAR 11 English III Geometry Biology I World History Apparel Design & Merchandising I	**YEAR 12** English IV Advanced Algebra American Government Psychology French II Apparel Design & Merchandising II	**WORK-BASED LEARNING EXPERIENCES** Job shadowing experience at a local business Part-time, paid work experience in fashion retail
PLANS BEYOND HIGH SCHOOL		
Learn more about graphic computer design; get a job designing costumes with a theatrical agency; research a degree in fashion design at the university		

The Business Systems Career Pathway

What is the Business Systems Career Pathway?

Approximately one-third of the work force is employed in jobs related to business operations. Students in this pathway might pursue careers in administrative services, accounting and financial services, sales and marketing, and information processing. They could work in resorts, accounting firms, banks, department stores, services industries, real estate, insurance companies, health care facilities, restaurants, or run their own businesses.

What skills and personality traits do people in this pathway have in common?

- Analytical thinking skills
- Mathematical and statistical skills
- Computer skills
- Organizational skills
- Dependability
- Sales ability
- Writing skills
- Interpersonal skills
- Ability to deal tactfully with people
- Organizational skills
- Leadership skills
- Ability to do research
- Problem-solving and decision-making skills
- Ability to work under pressure
- Ability to work as part of a team

WHAT and *WHERE* are the jobs in Arizona?

THE BUSINESS SYSTEMS CAREER PATHWAY				MAJOR EMPLOYERS
If your education and training is . . .	**High School Diploma, On-the-Job Training, and/or Related Work Experience–**	**Technical Training, Community College, and/or Related Work Experience–**	**Specialized Schools, Community College, University, and/or Related Work Experience–**	**GSPED Industry Clusters**
If your career interest is Administrative Services . . .	*. . . then these jobs are for you!* Counter Clerk Mail Clerk Office Clerk Personnel Clerk Word Processor	*. . . then these jobs are for you!* Administrative Assistant Medical Records Administrator Office Manager Paralegal Personnel Manager	*. . . then these jobs are for you!* Business Teacher Manager Office Planner Personnel Recruiter Training Specialist	Bioindustry Environmental Technology Food, Fiber, and Natural Products
If your career interest is Accounting / Financial Services . . .	*. . . then these jobs are for you!* Accounting Clerk Bank Clerk Bank Teller Credit Checker Payroll Clerk	*. . . then these jobs are for you!* Bookkeeper Claim Adjuster Credit Collector Loan Interviewer Payroll Clerk	*. . . then these jobs are for you!* Accountant Actuary Financial Analyst Investment Banker Underwriter	High-Tech Industry Minerals and Mining Optics
If your career interest is Sales and Marketing . . .	*. . . then these jobs are for you!* Advertising Clerk Cashier Equipment Rental Agent Sales Clerk Stock Clerk	*. . . then these jobs are for you!* Auctioneer Buyer Insurance Agent Real Estate Sales Travel Agent	*. . . then these jobs are for you!* Advertising Account Executive Marketing Director Marketing Researcher Media Salesperson Public Relations Manager	Plastics and Composite Materials Senior Living Software Tourism
If your career interest is Information Processing . . .	*. . . then these jobs are for you!* Computer Operator Data Entry Person File Clerk	*. . . then these jobs are for you!* Computer Operator Computer Programmer Software Documentation Writer Web Page Designer	*. . . then these jobs are for you!* Computer Consultant Computer Database Manager Data Processing Manager Systems Analyst	Transportation and Distribution *The jobs to the left may be available in one or more of the above clusters.*

What *postsecondary options* do high school graduates have?
What *postsecondary programs of study* are available in Arizona?

POSTSECONDARY OPTIONS	Examples of Programs of Study Provided by Community Colleges and Trade and Technical Schools	Examples of Programs of Study Provided by Colleges and Universities
Apprenticeship. An apprentice is a worker who progressively learns to become a journeyman, craftsman, or mechanic in a skilled trade. Generally this requires two or more years of training. The apprentice receives both on-the-job and classroom training on his/her way to becoming a journeyman. *Military Training*. A high school graduate may enlist in the military upon successful completion of ASVAB testing and a physical examination. Enlistment may be in the Air Force, Army, Navy, Marines, Coast Guard, or the Army or the Air Force National Guard. *Trade/Technical School*. Admission requirements vary, but programs range from occupationally specific to bachelor's degree programs. *Community College*. Arizona has 19 community colleges with programs that range from 2-year university transfer degrees to certificates of completion in occupationally specific programs which can be completed in 15-60 semester hours. *Private Colleges.* Admission requirements vary, but a variety of 4-year degree programs are offered. *State University Programs.* Arizona's three state universities–Arizona State University, Northern Arizona University, and the University of Arizona–have specific admission requirements and offer Bachelor, Masters, and Doctoral degrees in many fields.	Accounting Advertising Auto Business & Sales Banking and Finance Business Administration Business Information Systems Clerk Typist Computer Science Data Processing Desktop Publishing Economics Executive Secretary Fashion Merchandising Financial Planning Gaming Management Hotel/Motel Operations Import/Export Trade Life Insurance Marketing Medical Records Management Medical Transcriptionist Office Automation Systems Paralegal Public Administration Public Relations Real Estate Retail Management/Marketing Small Business Management	Accounting Business Administration Business Economics Business Education Communication Technologies Computer Programming Computer Science Decision & Information Systems Entrepreneurship Fashion Merchandising Finance and Banking Human Resources Management Information Systems Operations Management Project Management Public Management Purchasing Retailing & Consumer Studies Taxation Technology Education

Career Plan #1

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Business Systems

3. CAREER INTEREST: Administrative services

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Geometry Earth Science Health & Physical Education Introduction to Computers Business Management Technology I	**YEAR 10** English II Algebra I Biology I Speech U.S. History Business Management Technology II	**EXTRA-CURRICULAR ACTIVITIES** Future Business Leaders of America (FBLA) Debate Team Thespians
YEAR 11 English III Algebra II Biology II Geography Administrative Information Services I	**YEAR 12** English IV Business Math Civics Economics Administrative Information Services II	**WORK-BASED LEARNING EXPERIENCES** Job shadowing experience in the business environment Internship in the business environment
PLANS BEYOND HIGH SCHOOL		
Work at a temporary agency to gain work experience in a variety of settings and to learn new computer applications; acquire a full-time job in the business environment; pursue on-the-job training, join a professional organization, and attend professional development seminars		

Career Plan #2

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Business Systems

3. CAREER INTEREST: Accounting

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Geometry Earth Science Health & Physical Education Introduction to Computers Business Management Technology I	**YEAR 10** English II Algebra I Biology I U.S. History Business Management Technology II German I	**EXTRA-CURRICULAR ACTIVITIES** Future Business Leaders of America (FBLA) Student Government
YEAR 11 English III Algebra II Biology II World History Economics Accounting I	**YEAR 12** English IV Business Math American Government Accounting-Cooperative Education Accounting II German II	**WORK-BASED LEARNING EXPERIENCES** School-based enterprise Job shadowing experience in an accounting firm Internship with an accounting firm
PLANS BEYOND HIGH SCHOOL		
Get a part-time job and pursue an associate degree in accounting at the community college; investigate degree programs at the university		

Career Plan #3

1. SIGNATURES: _____ _____ _____

Student | Parent/Guardian | Counselor/Advisor

2. CAREER PATHWAY: Business Systems

3. CAREER INTEREST: Marketing

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Algebra I Biology I Health & Physical Education Introduction to Computers Business Management Technology I	**YEAR 10** English II Geometry Biology II U.S. History Business Management Technology II German I	**EXTRA-CURRICULAR ACTIVITIES** Distributive Education Clubs of America (DECA) Speech and Debate Team Student Government International Language Club
YEAR 11 English III Algebra II Chemistry World History Sales & Marketing II German II	**YEAR 12** English IV Advanced Algebra World Geography Sales & Marketing II Psychology	**WORK-BASED LEARNING EXPERIENCES** Internship at a local business Part-time, paid work experience
PLANS BEYOND HIGH SCHOOL		
Investigate small business start-up; Work on a bachelor's degree.; Acquire a master's degree in marketing		

The Engineering and Industrial Systems Career Pathway

What is the Engineering and Industrial Systems Career Pathway?

Technology has an enormous effect on our lives. It is used to design, develop, install, and maintain electrical, mechanical, and structural systems. With the economy continuing to move in the direction of more scientific, high tech areas, job opportunities in this pathway should be excellent in the coming decade. Students in this pathway could pursue careers in engineering, construction, manufacturing, and transportation. They could work at private engineering firms, construction companies, manufacturing companies, architectural firms, automotive service shops, utility companies, airports, or run their own businesses.

What skills and personality traits do people in this pathway have in common?

- Analytical skills
- Aptitude for math and science
- Manual dexterity
- Physical stamina
- Ability to read and understand factual materials
- Ability to give and follow instructions
- Good color vision
- Attention to industry standards
- Computer skills
- Communication skills
- Precise, accurate record-keeping skills
- Ability to work alone or as part of a team

WHAT and *WHERE* are the jobs in Arizona?

THE ENGINEERING AND INDUSTRIAL SYSTEMS CAREER PATHWAY				MAJOR EMPLOYERS
If your education and training is . . .	**High School Diploma, On-the-Job Training, and/or Related Work Experience–**	**Technical Training, Community College, and/or Related Work Experience–**	**Specialized Schools, Community College, University, and/or Related Work Experience–**	**GSPED Industry Clusters**
If your career interest is Engineering . . .	*. . . then these jobs are for you!* Lab Worker	*. . . then these jobs are for you!* CAD Operator Electrical Technician Engineering Technician Heating and Cooling Technician Mechanical Engineering Tech Robotics Technician	*. . . then these jobs are for you!* Aerospace Engineer Air-Conditioning Engineer Electronics/Electrical Engineer Mathematician Mechanical Engineer	Bioindustry Environmental Technology Food, Fiber, and Natural Products High Tech Industry
If your career interest is Construction. . .	*. . . then these jobs are for you!* Bricklayer Construction Laborer Drywall Installer/Finisher Floor Covering Installer Heavy Equipment Worker Painter	*. . . then these jobs are for you!* Architectural Model Maker Carpenter Construction Electrician Plumber/Pipe Fitter Sheet Metal Worker Welder	*. . . then these jobs are for you!* Architect Civil Engineer Construction Manager/Supervisor Heavy Construction Contractor Landscape Architect Surveyor	Minerals and Mining Optics Plastics and Composite Materials Senior Living Software
If your career interest is Manufacturing..	*. . . then these jobs are for you!* Hydraulic Maintenance Worker Laser Machine Operator Machine Tool Operator Quality Control Inspector	*. . . then these jobs are for you!* CAD Specialist Industrial Machinery Repairer Tool and Die Maker Welder and Cutter	*. . . then these jobs are for you!* Industrial Designer Industrial Engineer Manufacturing Engineer Robotics Engineer	Tourism Transportation and Distribution
If your career interest is Transportation..	*. . . then these jobs are for you!* Airport Baggage Handler Car Wash Worker Mover Service Station Attendant Truck/Tow Truck Operator	*. . . then these jobs are for you!* Aircraft Mechanic Auto Body Repairer Automotive Mechanic Avionics Technician Railroad Engineer	*. . . then these jobs are for you!* Air Traffic Controller Airline Dispatcher Airplane Pilot Auto/Diesel Mechanic Flight Instructor	*The jobs to the left may be available in one or more of the above clusters.*

What *postsecondary options* do high school graduates have?
What *postsecondary programs of study* are available in Arizona?

POSTSECONDARY OPTIONS	Examples of Programs of Study Provided by Community Colleges and Trade and Technical Schools	Examples of Programs of Study Provided by Colleges and Universities
Apprenticeship. An apprentice is a worker who progressively learns to become a journeyman, craftsman, or mechanic in a skilled trade. Generally this requires two or more years of training. The apprentice receives both on-the-job and classroom training on his/her way to becoming a journeyman. *Military Training*. A high school graduate may enlist in the military upon successful completion of ASVAB testing and a physical examination. Enlistment may be in the Air Force, Army, Navy, Marines, Coast Guard, or the Army or the Air Force National Guard. *Trade/Technical School*. Admission requirements vary, but programs range from occupationally specific to bachelor's degree programs. *Community College*. Arizona has 19 community colleges with programs that range from 2-year university transfer degrees to certificates of completion in occupationally specific programs which can be completed in 15-60 semester hours. *Private Colleges.* Admission requirements vary, but a variety of 4-year degree programs are offered. *State University Programs.* Arizona's three state universities–Arizona State University, Northern Arizona University, and the University of Arizona–have specific admission requirements and offer Bachelor, Masters, and Doctoral degrees in many fields.	A/C, Heating, and Ventilation Aircraft Maintenance Aircraft Mechanics Architectural Drafting Automotive Technology Building Maintenance Building Trades Computer-aided Drafting Commercial Truck Driver Construction Management Copier Service Technician Diesel Truck Driver Drafting Technology Electrical Maintenance Engineering Technology Fire Science Flight Technology Graphic Art or Graphic Technology Hazardous Material Management Industrial Technology Industrial Welding Machinist Manufacturing: Drafting, Processes, Technology Mechanical Drafting Plumbing Tool and Die Technology	Architecture and Environmental Design Civil Engineering Technology Computer Integrated Manufacturing Computer Science Design Management and Construction Electrical Engineering Grounds Construction and Maintenance Hazardous Materials Industrial and Manufacturing Systems Industrial Technology Manufacturing Education Mechanical and Aerospace Engineering Telecommunications

Career Plan #1

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Engineering and Industrial Systems

3. CAREER INTEREST: Electrical engineering

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Geometry Earth Science Health & Physical Education Introduction to Computers Industrial Technology I	**YEAR 10** English II Algebra I Biology I Speech U.S. History Industrial Technology II	**EXTRA-CURRICULAR ACTIVITIES** Vocational Industrial Clubs of America (VICA) Science Club
YEAR 11 English III Algebra II Chemistry U.S. History Residential Electrician I	**YEAR 12** English IV Calculus American Government Free Enterprise Residential Electrician II	**WORK-BASED LEARNING EXPERIENCES** Habitat for Humanity Project Apprenticeship
PLANS BEYOND HIGH SCHOOL		
Complete a 4-year apprenticeship program; start a contractual business		

Career Plan #2

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Engineering and Industrial Systems

3. CAREER INTEREST: Aircraft mechanics

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Geometry Earth Science Health & Physical Education Introduction to Computers Industrial Technology I	**YEAR 10** English II Algebra I Biology I Speech U.S. History Industrial Technology II	**EXTRA-CURRICULAR ACTIVITIES** Vocational Industrial Clubs of America (VICA) JROTC
YEAR 11 English III Algebra II Chemistry U.S. History Aircraft Mechanics I	**YEAR 12** English IV Calculus American Government Technical Writing Aircraft Mechanics II	**WORK-BASED LEARNING EXPERIENCES** Tech-Prep Program with the community college Part-time, paid work experience
PLANS BEYOND HIGH SCHOOL		
Continue aircraft mechanics program at the community college		

Career Plan #3

1. SIGNATURES: _____ _____ _____

Student | Parent/Guardian | Counselor/Advisor

2. CAREER PATHWAY: Engineering and Industrial Systems

3. CAREER INTEREST: Architecture

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Geometry Earth Science Health & Physical Education Introduction to Computers Industrial Technology I	**YEAR 10** English II Algebra I Biology I Art U.S. History Industrial Technology II	**EXTRA-CURRICULAR ACTIVITIES** Vocational Industrial Clubs of America (VICA) Art Club
YEAR 11 English III Algebra II Chemistry U.S. History Drafting Technology I	**YEAR 12** English IV Calculus American Government Technical Writing Drafting Technology II Drafting-Cooperative Education	**WORK-BASED LEARNING EXPERIENCES** Cooperative education
PLANS BEYOND HIGH SCHOOL		
Investigate an apprenticeship in architectural design		

The Health Services Career Pathway

What is the Health Services Career Pathway?

The field of health services is booming today, a trend which is expected to continue well into the next century. Health services careers encompass the diagnosis and treatment of diseases, disorders, and injuries; laboratory technology, nursing, and therapy. Students interested in this pathway could become doctors, nurses, dentists, therapists, lab technicians, optometrists, or pharmacists. They could work in medical laboratories, hospitals, medical offices, nursing homes, hospices, or run their own businesses.

What skills and personality traits do people in this pathway have in common?

- Enjoyment in helping others
- Good judgment
- Attention to detail
- Ability to work under stress
- Organizational skills
- Reliability
- Compassion
- Interpersonal skills
- Communication skills
- Math and science skills
- Manual dexterity
- Physical stamina
- Ability to follow and give instructions
- Ability to work as part of a team
- Understanding of medical terms

WHAT and *WHERE* are the jobs in Arizona?

THE HEALTH SERVICES CAREER PATHWAY				MAJOR EMPLOYERS
If your education and training is . . .	**High School Diploma, On-the-Job Training, and/or Related Work Experience–**	**Technical Training, Community College, and/or Related Work Experience–**	**Specialized Schools, Community College, University, and/or Related Work Experience–**	**GSPED Industry Clusters**
If your career interest is Examination, Diagnosis, and Treatment of Diseases, Disorders, and Injuries	*. . . then these jobs are for you!* Dental Assistant Dialysis Technician EEG/EKG Technologist Emergency Medical Technician Home Health Aide Nurse's Aide Operating Room Technician Orderly Personal Health Aide	*. . . then these jobs are for you!* Cardiology Technologist Dental Hygienist Dental Laboratory Technician Fitness Coach/Trainer Licensed Practical Nurse Medical Record Technician Occupational Therapy Assistant Pharmacy Technician Physical Therapy Assistant Radiological Technologist Respiratory Therapist Surgical Technologist	*. . . then these jobs are for you!* Audiologist Allergist Anesthesiologist Cardiologist Chiropractor Clinical Laboratory Technologist Dentist Dermatologist Dietician Family Physician Gynecologist Obstetrician Occupational Therapist Ophthalmologist Pharmacist Physical Therapist Physician Assistant Plastic Surgeon Podiatrist Recreation Therapist Registered Nurse Speech Therapist	Bioindustry Environmental Technology Food, Fiber, and Natural Products High-Tech Industry Minerals and Mining Optics Plastics and Composite Materials Senior Living Software Tourism Transportation and Distribution *The jobs to the left may be available in one or more of the above clusters.*

What *postsecondary options* do high school graduates have? What *postsecondary programs of study* are available in Arizona?

POSTSECONDARY OPTIONS	Examples of Programs of Study Provided by Community Colleges and Trade and Technical Schools	Examples of Programs of Study Provided by Colleges and Universities
Apprenticeship. An apprentice is a worker who progressively learns to become a journeyman, craftsman, or mechanic in a skilled trade. Generally this requires two or more years of training. The apprentice receives both on-the-job and classroom training on his/her way to becoming a journeyman. *Military Training*. A high school graduate may enlist in the military upon successful completion of ASVAB testing and a physical examination. Enlistment may be in the Air Force, Army, Navy, Marines, Coast Guard, or the Army or the Air Force National Guard. *Trade/Technical School*. Admission requirements vary, but programs range from occupationally specific to bachelor's degree programs. *Community College*. Arizona has 19 community colleges with programs that range from 2-year university transfer degrees to certificates of completion in occupationally specific programs which can be completed in 15-60 semester hours. *Private Colleges.* Admission requirements vary, but a variety of 4-year degree programs are offered. *State University Programs.* Arizona's three state universities–Arizona	Chemical Dependency Counselor Clinical Medical Assisting Community Nutrition Worker Dental Assisting Technology Dental Hygiene Diagnostic Ultra Sound Technician Dietary Management Dietary Education Eating Disorders Gerontology Medical Assistant/Sports Medicine Medical Radiography Medical Records Technician Medical Secretary Medical Transcription/Office Specialist Mental Health Technician Nursing Aide/Home Health Aide Nursing Assistant Nursing, Practical Occupational Therapy Assistant Paramedic Pharmacy Technician Pre-medical/Pre-nursing/Pre-veterinary Psychiatric Technician Respiratory Care Therapist Veterinary Assistant	Clinical Laboratory Sciences Communication Disorders Food Nutrition Science Medicine Medical Technology Nursing Occupational Safety & Health Optical Sciences Pharmacy Pre-Med/Pre-pharmacy/Pre-Optometry Psychiatry Psychology Speech & Hearing Sciences

Career Plan #1

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Health Services

3. CAREER INTEREST: Nursing

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Applied Math I Earth Science Health & Physical Education Introduction to Computers Applied Biological Systems I	**YEAR 10** English II Applied Math II Biology Speech U.S. History Applied Biological Systems II	**EXTRA-CURRICULAR ACTIVITIES** Vocational Industrial Clubs of America (VICA) Science Club Tennis Club
YEAR 11 English III Algebra I Economics Sociology Geography Nursing Assistant I	**YEAR 12** English IV Business Math Chemistry American Government Psychology Nursing Assistant II	**WORK-BASED LEARNING EXPERIENCES** Job shadowing experiences at a hospital, clinic, and nursing home Internship at a doctor's office
PLANS BEYOND HIGH SCHOOL		
Complete the Associate Degree Nursing Program at the community college and the Bachelor's of Science in Nursing Program at the university		

Career Plan #2

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Health Services

3. CAREER INTEREST: Dental assisting

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Applied Math I Earth Science Health & Physical Education Introduction to Computers Applied Biological Systems I	**YEAR 10** English II Applied Math II Biology Speech U.S. History Applied Biological Systems II	**COMMUNITY AND EXTRA-CURRICULAR ACTIVITIES** Vocational Industrial Clubs of America (VICA) Speech and Debate Team
YEAR 11 English III Algebra I Economics Sociology Geography Dental Assisting I	**YEAR 12** English IV Business Math Chemistry American Government Psychology Dental Assisting II	**WORK-BASED LEARNING EXPERIENCES** Job shadowing experience at a dentist's office Internship at a dentist's office
PLANS BEYOND HIGH SCHOOL		
Acquire a job in a dental office; research dental hygienist programs		

Career Plan #3

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Health Services

3. CAREER INTEREST: Emergency medical technology

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Applied Math I Earth Science Health & Physical Education Introduction to Computers Applied Biological Systems I	**YEAR 10** English II Applied Math II Biology Speech U.S. History Applied Biological Systems II	**COMMUNITY AND EXTRA-CURRICULAR ACTIVITIES** Vocational Industrial Clubs of America (VICA) Service learning experience with Red Cross
YEAR 11 English III Algebra I Economics Sociology Geography Nursing Assistant I	**YEAR 12** English IV Business Math Chemistry American Government Psychology Nursing Assistant II	**WORK-BASED LEARNING EXPERIENCES** Job shadowing experience with fire department and hospital emergency room Service learning experience with Red Cross
PLANS BEYOND HIGH SCHOOL		
Complete the Emergency Medical Technician program and the Emergency Paramedic Program at the community college		

The Natural Resources Career Pathway

What is the Natural Resources Career Pathway?

Agriculture, horticulture, forestry, and wildlife management have traditionally been important industries in Arizona. People who work in these careers are observant and like to solve problems. Students in this pathways could become farmers, ranchers, ecologists, or scientists. They could work on farms and ranches, research laboratories, colleges and universities, private consulting firms, or run their own businesses.

What skills and personality traits do people in this pathway have in common?

- Scientific aptitude
- Math skills
- Planning and organizing skills
- Observational skills
- Problem-solving skills
- Patience when working with animals
- Composure in stressful situations
- Ability to read and understand factual information
- An understanding of living systems
- Ability to work alone or as part of a team

WHAT and *WHERE* are the jobs in Arizona?

THE NATURAL RESOURCES CAREER PATHWAY				MAJOR EMPLOYERS
If your education and training is . . .	**High School Diploma, On-the-Job Training, and/or Related Work Experience–**	**Technical Training, Community College, and/or Related Work Experience–**	**Specialized Schools, Community College, University, and/or Related Work Experience–**	**GSPED Industry Clusters**
If your career interest is Plant Science. . .	*. . . then these jobs are for you!* General Farmer Field Worker Harvester Orchard Worker Produce Sorter	*. . . then these jobs are for you!* Farm Supervisor Field Supervisor Seed Representative Soil Technologist Water Technologist	*. . . then these jobs are for you!* Agronomist Conservationist Farm Manager/Owner Plant Breeder Seed Analyst	Bioindustry Environmental Technology Food, Fiber, and Natural Products
If your career interest is Animal Science. . .	*. . . then these jobs are for you!* Animal Caretaker Dairy Hand Dog Groomer Pet Store Worker Veterinary Attendant	*. . . then these jobs are for you!* Animal Breeder Biotechnician Dairy Technologist Horse Trainer Veterinary Technician	*. . . then these jobs are for you!* Animal Scientist Dairy Manager Ranch Owner Veterinarian Zoologist	High Tech Industry Minerals and Mining Optics
If your career interest is Horticulture. . .	*. . . then these jobs are for you!* Flower Grower Greenskeeper Landscape Gardener Nursery Worker Tree Pruner	*. . . then these jobs are for you!* Florist/Floral Designer Ground Maintenance Supervisor Landscape Supervisor Ornamental Horticulture Tech	*. . . then these jobs are for you!* Landscape Architect Landscape Contractor Nursery Owner Plant Geneticist	Plastics and Composite Materials Senior Living Software Tourism
If your career interest is Forestry and Wildlife Management. . .	*. . . then these jobs are for you!* Forester Aide Logger Park Worker Fish Hatchery Worker Game Refuge Worker	*. . . then these jobs are for you!* Timber Harvester Fish Hatchery Technician Game Refuge Technician Taxidermist Wildlife Technician	*. . . then these jobs are for you!* Forester Ranger Naturalist Range Manager Wildlife Biologist Wildlife Ecologist	Transportation and Distribution *The jobs to the left may be available in one or more of the above clusters.*

What *postsecondary options* do high school graduates have? What *postsecondary programs of study* are available in Arizona?

POSTSECONDARY OPTIONS	Examples of Programs of Study Provided by Community Colleges and Trade and Technical Schools	Examples of Programs of Study Provided by Colleges and Universities
Apprenticeship. An apprentice is a worker who progressively learns to become a journeyman, craftsman, or mechanic in a skilled trade. Generally this requires two or more years of training. The apprentice *Military Training*. A high school graduate may enlist in the military upon successful completion of ASVAB testing and a physical examination. Enlistment may be in the Air Force, Army, Navy, Marines, Coast Guard, or the Army or the Air Force National Guard. *Trade/Technical School*. Admission requirements vary, but programs range from occupationally specific to bachelor's degree programs. *Community College*. Arizona has 19 community colleges with programs that range from 2-year university transfer degrees to certificates of completion in occupationally specific programs which can be completed in 15-60 semester hours. *Private Colleges.* Admission requirements vary, but a variety of 4-year degree programs are offered. *State University Programs.* Arizona's three state universities–Arizona State University, Northern Arizona University, and the University of Arizona–have specific admission requirements and offer Bachelor, Masters, and Doctoral degrees in many fields.	Agri-Business Sales and Services Agriculture Mechanics Agriculture Production and Management Agriculture Supplies and Services Agronomy Animal Science Environmental Design Drafting Environmental Lab Analysis Environmental Sciences Equine Training and Management Farm Business and Management Horsemanship and Basic Training Horticulture Landscape Technician Marine Power Technology Mining Technology Ornamental Horticulture and Landscaping Pest Control Plant Science Pre-agriculture/Pre-forestry Turf Grass Management Veterinarian Assistant Wastewater or Water Technology	Agribusiness Agriculture and Resources Economics Agriculture Technology Management Animal Science Arid Lands Resource Science Earth Science Environmental Planning Environmental Resources in Agriculture Environmental Science Forestry Geosciences Landscape Architecture Parks and Recreation Management Plant Science Range Management Renewable Natural Resources Studies Soil and Water Science Water Resources Administration Wildlife and Fisheries Science Zoology

Career Plan #1

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Natural Resources

3. CAREER INTEREST: Wildlife ecology

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Applied Math I Earth Science Health & Physical Education Introduction to Computers Applied Biological Systems I	**YEAR 10** English II Applied Math II Speech U.S. History Applied Biological Systems II Zoology	**EXTRA-CURRICULAR ACTIVITIES** Future Farmers of America (FFA) Speech and Debate Student Government
YEAR 11 English III Algebra I Biology II Geography Agricultural Business Management- Renewable Natural Resources I	**YEAR 12** English IV Business Math American Government Agricultural-Cooperative Education Agricultural Business Management- Renewable Natural Resources II	**WORK-BASED LEARNING EXPERIENCES** Agricultural-Cooperative Education
PLANS BEYOND HIGH SCHOOL		
Apply for a summer internship at a state park; interview people who work in environmental science occupations; search the Internet for information available from environment organizations; go to the library and review environmental periodicals; research institutions providing degree programs in environmental science with a specialty in wildlife ecology		

Career Plan #2

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Natural Resources

3. CAREER INTEREST: Animals

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Algebra I Zoology I Health & Physical Education Introduction to Computers Applied Biological Systems I	**YEAR 10** English II Algebra II Zoology II U.S. History Applied Biological Systems II Zoology II	**EXTRA-CURRICULAR ACTIVITIES** Future Farmers of America (FFA) Science Club
YEAR 11 English III Algebra I Chemistry Geography Agricultural Business Management-Animal Science I	**YEAR 12** English IV Advanced Math Physics American Government Agricultural-Cooperative Education Agricultural Business Management-Animal Science II	**WORK-BASED LEARNING EXPERIENCES** Job shadowing experience at a veterinarian's office Agricultural-Cooperative Education
PLANS BEYOND HIGH SCHOOL		
Acquire experience working in a veterinarian's office; take courses at the community college; apply to schools of the provide degrees in veterinary science		

Career Plan #3

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Natural Resources

3. CAREER INTEREST: Landscaping

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Applied Math I Earth Science Health & Physical Education Introduction to Computers Applied Biological Systems I	**YEAR 10** English II Applied Math II Speech U.S. History Applied Biological Systems II	**EXTRA-CURRICULAR ACTIVITIES** Future Farmers of America (FFA)
YEAR 11 English III Algebra I Botany II Geography Agricultural Business Management-Horticulture I	**YEAR 12** English IV Advanced Math American Government Agricultural-Cooperative Education Agricultural Business Management-Horticulture II	**WORK-BASED LEARNING EXPERIENCES** Agricultural-Cooperative Education
PLANS BEYOND HIGH SCHOOL		
Secure a job as a greenskeeper		

Career Plan #1

1. SIGNATURES: _____ _____ _____

Student | Parent/Guardian | Counselor/Advisor

2. CAREER PATHWAY: Social and Human Services

3. CAREER INTEREST: Child care

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Algebra I Biology I Health & Physical Education Introduction to Computers Human Services Technology I	**YEAR 10** English II Algebra II Biology II Spanish I U.S. History Human Services Technology II	**EXTRA-CURRICULAR ACTIVITIES** Students Together Rising In Vocational Education (STRIVE)
YEAR 11 English III Geometry Geography Spanish II Child Care and Guidance I Psychology	**YEAR 12** English IV Chemistry Government Child Care-Cooperative Education Child Care and Guidance II	**WORK-BASED LEARNING EXPERIENCES** Service Learning Experience Job shadowing experience at a day care center Child Care-Cooperative Education
PLANS BEYOND HIGH SCHOOL		
Find a position at a child care facility; take supervisory and management classes at the community college or university and open a day care center; go back to school and become a certified teacher		

Career Plan #2

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Social and Human Services

3. CAREER INTEREST: Firefighting

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Geometry Biology I Health & Physical Education Introduction to Computers Human Services Technology I	**YEAR 10** English II Algebra I Biology II U.S. History Human Services Technology II Spanish I	**EXTRA-CURRICULAR ACTIVITIES** Vocational Industrial Clubs of America (VICA)
YEAR 11 English III Algebra II Anatomy Public Speaking World History Firefighting I	**YEAR 12** English IV Chemistry American Government Psychology Firefighting II Spanish II	**WORK-BASED LEARNING EXPERIENCES** Job Shadowing Experience
PLANS BEYOND HIGH SCHOOL		
Obtain EMT-Basic Certificate, Fire Science Basic Certificate, and Fire Science Advanced Certificate from the community college		

Career Plan #3

1. SIGNATURES: _____ Student _____ Parent/Guardian _____ Counselor/Advisor

2. CAREER PATHWAY: Social and Human Services

3. CAREER INTEREST: Restaurant management/ownership

4. EDUCATION/TRAINING PLAN:

HIGH SCHOOL PLANS		
YEAR 9 English I Algebra I Biology I Health & Physical Education Introduction to Computers Applied Biological Systems I	**YEAR 10** English II Geometry Biology II U.S. History Speech Applied Biological Systems II	**EXTRA-CURRICULAR ACTIVITIES** Vocational Industrial Clubs of America (VICA)
YEAR 11 English III Algebra II Economics World History Food Production and Culinary Arts I	**YEAR 12** English IV Advanced Algebra American Government Food Production-Cooperative Ed Food Production and Culinary Arts II	**WORK-BASED LEARNING EXPERIENCES** Job shadowing experiences at a fast-food restaurant , hotel restaurant , and specialty restaurant Food Production-Cooperative Education Part-time, Paid Work Experience
PLANS BEYOND HIGH SCHOOL		
Inquire about getting a restaurant franchise; attend local workshops and classes at the community college on small business start-up		

The Social and Human Services Career Pathway

What is the Social and Human Services Career Pathway?

The careers available in the Social and Human Services pathway provide important functions in our communities. People who work in these careers are friendly, outgoing, and like to work with people. Students in this pathway could pursue careers related to hospitality, child and family services, personal and customer services, social services, law and legal services, education, and protective services. They could work in hotels, department stores, law offices, police departments, schools, restaurants, or run their own businesses.

What skills and personality traits do people in this pathway have in common?

- Communication skills
- Personableness
- Patience, creativity, organization, and understanding
- Good judgment
- Attention to detail
- Business aptitude
- Computer skills
- Dependableness
- Critical and creative thinking skills
- Good physical skills
- Ability to give and follow instructions
- Ability to plan and direct activities for others
- Teamwork

WHAT and *WHERE* are the jobs in Arizona?

THE SOCIAL AND HUMAN SERVICES CAREER PATHWAY				MAJOR EMPLOYERS
If your education and training is . . .	**High School Diploma, On-the-Job Training, and/or Related Work Experience–**	**Technical Training, Community College, and/or Related Work Experience–**	**Specialized Schools, Community College, University, and/or Related Work Experience–**	**GSPED Industry Clusters**
If your career interest is Hospitality/ Recreation. . .	*. . . then these jobs are for you!* Cashier Hotel Bellhop/Desk Clerk Hotel Housekeeper Kitchen Helper Recreation Worker Restaurant Host/Hostess Tour Guide Usher	*. . . then these jobs are for you!* Caterer/Cook/Chef Convention Specialist Flight Attendant Head Waiter/Waitress Lifeguard Ski/Golf Course Manager Social Director Theatre/Movie House Manager	*. . . then these jobs are for you!* Athletic Trainer/Coach Cruise Director Food and Beverage Manager Hotel Executive Housekeeper Hotel Manager Museum Curator Park Ranger Travel Agent	Bioindustry Environmental Technology Food, Fiber, and Natural Products High-Tech Industry Minerals and Mining
If your career interest is Government/ Community Services. . .	*. . . then these jobs are for you!* Armed Services Building Custodian Federal Government Worker Highway Maintenance Worker Postal Service Worker Security Guard Teacher's Aide Youth Organization Worker	*. . . then these jobs are for you!* Appraiser Corrections Officer Court Reporter Crime Lab Technician Detective Electric Power Service Worker Firefighter Legal Assistant Police Officer	*. . . then these jobs are for you!* Adult Education Worker City Manager Criminologist FBI Special Agent Foreign Service Worker Librarian Political Scientist Counselor/Psychologist School Administrator/Teacher Social Worker	Optics Plastics and Composite Materials Senior Living Software Tourism Transportation and Distribution
If your career interest is Personal Services. . .	*. . . then these jobs are for you!* Personal Shopper Pet Care Worker Child Care Worker Fast Food Franchise Worker Homemaker Housekeeper, Domestic	*. . . then these jobs are for you!* Alcohol and Drug Counselor Consumer Credit Counselor Cosmetologist Retail Jeweler Watch Repairer Day Care Worker	*. . . then these jobs are for you!* Funeral Director Lawyer Marriage and Family Counselor Child Development Specialist Vocational Counselor Interior Designer	*The jobs to the left may be available in one or more of the above clusters..*

What *postsecondary options* do high school graduates have?
What *postsecondary programs of study* are available in Arizona?

POSTSECONDARY OPTIONS	Examples of Programs of Study Provided by Community Colleges and Trade and Technical Schools	Examples of Programs of Study Provided by Colleges and Universities
Apprenticeship. An apprentice is a worker who progressively learns to become a journeyman, craftsman, or mechanic in a skilled trade. Generally this requires two or more years of training. The apprentice receives both on-the-job and classroom training on his/her way to becoming a journeyman. *Military Training*. A high school graduate may enlist in the military upon successful completion of ASVAB testing and a physical examination. Enlistment may be in the Air Force, Army, Navy, Marines, Coast Guard, or the Army or the Air Force National Guard. *Trade/Technical School*. Admission requirements vary, but programs range from occupationally specific to bachelor's degree programs. *Community College*. Arizona has 19 community colleges with programs that range from 2-year university transfer degrees to certificates of completion in occupationally specific programs which can be completed in 15-60 semester hours. *Private Colleges.* Admission requirements vary, but a variety of 4-year degree programs are offered. *State University Programs.* Arizona's three state universities–Arizona State University, Northern Arizona University, and the University of Arizona–have specific admission requirements and offer Bachelor, Masters, and Doctoral degrees in many fields.	Administration of Justice Aesthetician/Manicurist Airline Reservations Systems Apparel Construction Casino Card Dealer Child Care Assistant/Provider/Aide Child Care Administration Child Development Corrections/Rehabilitation Cosmetology Criminal Justice Culinary Arts Executive Housekeeping Food Service Administration Hospitality Hotel and Resort Management Human Services Aide Human Services Administration Law Enforcement Library Media Technology Meeting and Convention Management Political Science Pre-education/Pre-law/Pre-medicine Public Administration Restaurant Management Social Work Teacher Aide/Assistant Travel and Tourism	Counseling Criminal Justice/Administration Education Family and Consumer Resources Family Studies Fashion Merchandising History Humanities Justice Studies Law Medicine Music Therapy Philosophy Political Science Psychology Public Administration/Management/Planning Recreation Religious Studies Retailing and Consumer Studies School Library Science Sociology Women's Studies

Section VII. Implementation Strategies

Implementing career pathways *as a system* is a schoolwide effort, one that extends across all disciplines and requires the support of everyone: school board members, administrators, counselors, teachers, students, parents, and business and community partners. The expected outcome is a sequence of career-focused educational experiences that prepare students for work and lifelong learning.

The following 14 examples are only some of the strategies which can be used to implement the career pathways system. These strategies are organized under four headings: structuring the learning facility, organizational scheduling, curriculum and instructional delivery, and promotional tactics. They may be implemented as described here and/or used to generate additional ideas.

1. Structuring the Learning Facility
   - Career-Focused Academies
   - School as the Workplace

2. Organizational Scheduling
   - Flex Schedule
   - Block Schedule
   - Year-round Schedule

3. Curriculum and Instructional Delivery
   - Interdisciplinary Team Teaching
   - Thematic Units
   - Contextual Learning
   - All Aspects of the Industry
   - Authentic Learning Activities
   - Tech Prep Programs
   - Youth Apprenticeships

4. Promotional Tactics
   - Messages for Different Audiences
   - Special Events and Activities

1. Structuring the Learning Facility

When faced with the need to update or expand a facility, today's educators often find themselves addressing questions unique to career-focused education. How do we construct a learning environment that is in tune with industry and allows us to adapt to rapid technological change? How might we design buildings that attract students? How do we ensure that lab activities are safe and up to environmental codes? How do we further the goals of curriculum integration? How do we better serve the community that decides whether to keep funding us? Following are two examples of school reform that support the career pathways theme.

Career-Focused Academies. One way to reform large schools is to utilize the academy, or schools-within a school, model. This concept, which breaks schools down into small, manageable, quality-oriented communities, has three key components: the grouping of students with one set of teachers, a curriculum centered around a career theme, and strong ties with businesses that offer students work-based learning opportunities. Research shows that students in career-focused academies generally perform better and, regardless of their socio-economic background, go on to college in greater numbers than those in a regular high school. Academies have drawn praise for their ability to adapt to local needs, serve diverse populations, and empower teachers by giving them more of a say in all aspects of a program's operation.

School as the Workplace. Many educators believe that schools should be modeled after industry to give students experiences that closely align with the workplace. The educators in this example used the "mall concept" to design an educational facility that is wide open to students, teachers, businesses, and the entire community. The result is glass-walled classrooms and labs lining a central gathering space known as the mall. The mall is where students eat lunch, meet for performances, and attend career fairs and other after-hours functions. Industry representatives advised on how programs should be grouped, which equipment should be purchased, how the equipment should be arranged, and how large the labs should be. The computer and business center has networked computers and is arranged in a large semicircle divided by glass partitions. Students have their own work stations which they can personalize. The shopping mall concept promotes high visibility and teamwork. It allows employers to observe what's happening at all times without disturbing classes, and students can see what's transpiring in other programs.

2. Organizational Scheduling

Of the current trends in organizational scheduling, flex, block, and year-round emerge as the schedules most commonly tried. These schedules free educators from the confines of the traditional schedule. They tend to improve the learning environment, increase time for students to master higher-level skills, provide teachers with more planning time, and offer a common time frame for integrating the curriculum. Changing the school's

organizational schedule requires extensive education of all players, including the school board, parents, teachers, and students.

Flex Schedule. The flex schedule is being utilized by a few schools in Arizona. Mondays, Wednesdays, and Fridays are considered "regular" days with 55-minute classes. There are six class periods with lunch between classes 4 and 5. Tuesdays and Thursdays are the "flex days" with classes meeting for 100 minutes. On Tuesdays, classes 1, 2, and 3 are 100 minutes with lunch between classes 2 and 3. On Thursdays, classes 4, 5, and 6 meet with a lunch break between classes 5 and 6.

Flex days are ideal for working on computers. With the longer periods students are able to use spreadsheets to enter information, create pie charts and bar/column graphs, and then transfer them to the final document. Too often, in the regular 55-minute class, students become frustrated because it seems as if they "just get started" when it's time to shut down for the day. The flex schedule is also ideal for working on projects. Finally, students and teachers generally like meeting four times a week instead of five.

Block Schedule. Schools all over Arizona are experimenting with a variety of block schedules. The schedule described here is one where students meet for 2-hour blocks each day, 5 days a week. Students take a maximum of 3 classes at any given time, but complete a year-long course in a semester.

One very obvious advantage to the block schedule is that a teacher has much more teaching freedom. For those educators who use hands-on activities such as projects and simulations, an extended class period gives them the opportunity to teach more with fewer disruptions. Of course under a 2-hour block schedule, teachers who lecture would have to alter their teaching style to limit lecture to no more than 20 minutes and incorporate classroom discussions, activities, cooperative learning aspects, and simulations.

This schedule does have some challenges. It is possible that the teacher would "lose" students between their junior and senior years. Recruiting students for advanced courses and programs will need to occur twice a year instead of only once. Timing for progress reports and grades will also have to be adjusted. The first progress reports are due 2 1/2 to 3 weeks for classes that change at the end of 9 weeks with grades issued at the 4 1/2 and 9 week periods. The grade at the end of the semester would equate to a year-end grade under the traditional structure.

Year-round Schedule. Several school districts are using the year-round schedule. Although there may be many reasons for making such a move, the main reason is to increase student achievement. The year-round schedule has many advantages. For teachers it provides a more manageable schedule with fewer preparations, fewer students per semester, and more time to devote to planning instruction. Teachers have found that they can use the extended time to structure activities, to involve students in small group discussions that help them share their knowledge and discover relationships among the

concepts being taught, and to focus on projects that enable students to demonstrate their skills and knowledge. For most students, the year-round schedule is a more practical schedule. They generally take fewer classes at a time, but have the opportunity to earn more credits per year. In addition, this type of schedule gives them twice as much time to complete required courses. During the breaks, students could receive additional help, attend summer school, or go on vacation. The year-long schedule is conducive to placing students in cooperative education programs and also in developing student organizations.

3. Curriculum and Instruction

Efforts at this stage include teachers meeting to plan projects and activities, changing past procedures to fit new plans, and working cooperatively to design aligned, enhanced curriculum. This stage also includes initiating the integrated instruction that has been planned with emphases on learning through application, teaching cooperatively through joint assignments and units, and using community resources to support instruction. Following are strategies used by teachers to organize and deliver the curriculum.

Interdisciplinary Team Teaching. For integrated curriculum to work successfully, teacher teamwork is essential. Following are three examples of how some teachers pooled their efforts to improve student achievement through teamwork.

- An interdisciplinary team of three–a physics teacher, a math teacher, and an electronics teacher–developed plans for integrated activities using team teaching and class switching approaches. The teachers met before school, after school, during lunch, and at other times when they could manage to get together. In one activity, all three team-taught a segment on Ohm's Law. The math and science teachers covered theory and the electronics teacher help students with real-world applications. The teachers believe that students in the team-taught environment learned the concept better than students in traditional classrooms.

- Students in an architectural drafting class are keeping written journals as a joint assignment between the English and drafting teachers. The drafting teacher said the students resisted at first; they had, after all, signed up for drafting, not writing. That changed when the drafting teacher invited a representative from the Federal Aviation Administration to speak to the class. "I write in a journal everyday," the representative noted, explaining that her job requires that she write up all details of what she does. Now, says the drafting teacher, the students don't even question their journal writing assignment. In fact, you could even see an improvement in their journal entries, as well as increased motivation toward their other assignments.

- The English and business teachers worked together to have 11th graders prepare research papers on their career interests. They soon realized they needed cooperation from the business community so students would have access to up-to-date information. The business teacher gave students the names of employers to contact.

By the time the papers were due the students had either visited with and/or talked with the employers.

Thematic Units. Designing thematic units begins with the teachers of the disciplines involved in deciding on a common objective, theme, and time frame. There are three ways to develop a common theme: by topics, by categories, or by concepts. *Topics* are headings or outlines about a particular subject matter. Examples include immigration, war, flight, oil, or environment. Other topics could be current events or particular issues such as homelessness or AIDS. *Categories* are a group or classification to which particular facts and experiences belong. Examples are islands, animals, countries, or dance. *Concepts* are abstract ideas or thoughts around which discussion takes place. Concepts are more general than topics or categories. Democracy, love, death, or law are some examples. Once a theme is chosen, the following questions will help determine the appropriateness of the theme:

- Does the theme create a coherent view of the topic?
- Is the theme important to each of the disciplines involved?
- Will students learn the theme better with the disciplines combined or separated?
- Does the common theme help the students overcome the fragmentation of knowledge?

When planning the delivery of the thematic unit, it may be necessary to consider alternative schedules.

In *parallel scheduling*, students are grouped with a team of teachers. The unit is taught by each of the teachers as the students move from class to class. Since the teachers do not see each other during the day, they must rely on careful planning in order to provide their part of the unit as it relates to their discipline.

In *block scheduling*, rather than changing class every period students remain with the same teacher for a longer block of time. The teacher may use the time to teach in his or her discipline or use the time to expand the teaching to other content areas in the unit. All the teachers on the team can use the block period simultaneously.

In *flex scheduling*, students are blocked together for two periods on Monday and then on Tuesday they spend two periods in the class they missed on Monday.

An important feature of integrating the curriculum is to help students understand what they are learning. Appropriately designed learning activities will access higher level thinking skills. Likewise, performance-based assessment will be needed to measure students' outcomes. (See the description of *Authentic Learning Activities* for ideas about designing and evaluating activities.)

Contextual Learning. Many teachers are guilty of expecting students to absorb material through lectures and other traditional delivery methods. Some, however, are stepping out of the mold to incorporate contextual teaching into their lessons for very good reasons:

(1) Most people learn through hands-on activities, group interaction, and personal discovery. (2) Students need structure and substance presented in context so they can see the application of their learning to real-life situations. (3) The transfer of learning from one situation to another is not always predictable. Students must be taught how to apply organizational, reading, and thinking strategies learned in one class to other coursework. (4) Contextual teaching reaches students through all their senses and appeals to different learning styles. (5) Depth is more important than breadth. Teachers should help students master specific concepts and then apply these concepts to new problems and situations. Following are two examples of contextual learning experiences:

- Students take career interest inventories, narrow their choices to three fields and spend a couple of hours researching them with a classmate. They learn about the careers by interviewing people in the field and reading occupational handbooks and vocational descriptions. They also learn traditional research techniques, such as how to compile a bibliography. The first half of the unit culminates with a research paper on one career and a short oral presentation that includes a job description, training and work experience requirements, beginning and average salary estimates, and a profile of an experienced worker. The second half of the unit consists of a field trip to a technical school, a community college, and a university where students can explore educational offerings for different careers. Using knowledge gained on the field trip, students write an essay designed to convince a scholarship committee or prospective employer that they are best qualified for a job.

- Students learn about self-examination by reading excerpts from autobiographies by Ben Franklin, Richard Wright, and Sandra Cisneros and poems by Walt Whitman and Emily Dickenson. They analyze the authors' personal strengths and weaknesses and then examine their own qualities and goals. They think about the skills, finances, lifestyle, job experiences, and hurdles they may experience in reaching their goals. They create a resume and an autobiography that addresses the questions "Who am I?" and "What do I want to be?"

All Aspects of the Industry. A school implementing the career pathways system should provide students with experiences in all aspects of an industry. These aspects are Technology, Health, Community, Environment, Production, Career Awareness, Safety, Management, Planning, and Finance. Following is an example of how a school used the AAI principles to both integrate and contextualize the curriculum.

The teachers decided to reinforced the principles of AAI by creating interactive work-based scenarios along with challenging key questions to be taught in academic and vocational classes. The purpose of the scenarios was to inspire interesting, creative projects and problem-solving opportunities for students. Some of the scenarios provided enough information; others required the teacher and/or the students to add information. Students could work alone or in teams to solve the scenarios. Most required teacher direction. Together the teachers and the students determined the criteria used to measure the project outcomes. Some of the scenarios asked for specific products such as research

papers, models, presentations, and hands-on products. Following are three examples of scenarios:

- You fell and injured your back. You went to the hospital and were treated by a nurse practitioner and a surgical technologist. You really liked these people and the job they were doing. You are now considering these areas as career options. What does it take to become a nurse practitioner and a surgical technologist? Compare and contrast these two specialty areas. What are the education costs and opportunities in these fields? What steps and training/education are involved in making this career choice a reality? Develop a 4-year plan that will enable you to reach your goal of entering one of these fields.

- You are working for a small manufacturing company that has outgrown its communication system. You are in charge of a team that has been assigned the job of designing a communication system that will meet the needs of a growing company for the next 10 years. Investigate communication technology, applicable laws, research and new and emerging communications technologies that are predicted in the near future. Develop a plan and present it to the board of directors. Include in the plan timelines and a cost analysis for this project.

- After completing 2 successful years in the Food Production and Culinary Arts Program, you have decided to start a catering company that would focus on small groups and family gatherings. Working with two other team members, develop a business plan that would list areas of consideration in developing this small business enterprise that could compete with the larger catering businesses in the area. Develop a comprehensive plan that includes: timeline, business forecasting, advertising and design of a logo, and the printing of a brochure. Develop a variation plan that focuses on a particular ethnic menu and describe how you would develop such a menu.

Authentic Learning Activities. Learning activities are tools for attaining the objectives of lessons and units. They require students to build on priorities in order to apply step-by-step procedures, demonstrate or model processes, and develop products. Learning activities include the application of the language arts concepts of listening, reading, speaking, and writing; math and science principles; and technology skills. By adding a work-based learning component, students are able to connect the knowledge and skills they learn in the classroom to the actual work setting. The following key components may be used to describe most learning activities.

- *Title* identifies the learning activity by name.

- *Skills* identifies the competencies and indicators, related academic skills, student organization events, and industry standards that the activity addresses. The intent of the learning activity is to teach knowledge, attitudes, and skills specific to the course

outcomes and to maximize instructional time. By combining skills and outcomes in classroom and work-based learning experiences, teachers are able to meet this goal.

- *Duration* suggests the base amount of time needed to complete the activity. This time should be used only as a guideline. Teachers may adapt activities to their own style, the students, and the facility. There must be enough time to master the competencies and indicators, as well as time to explore new concepts that may arise. The teacher may also include guest speakers, field trips, and other work-based learning experiences that reinforce learning.

- *Description* summarizes what transpires during the activity and the expected outcomes. Outcomes may be in the form of improved attitudes and/or behavior and the acquisition of new knowledge and skills. The description may include objectives to be accomplished, a list of the skills and concepts to be learned, a brief description of the instructional/work setting, and specific tasks to be performed and/or products to be developed. Prerequisite skills and knowledge may be included.

- *Equipment and Supplies* lists the materials required to complete the activity. This includes what is supplied by the teacher and what is supplied by the students. Schools with low budgets may need to consider different options. For example, the modular approach, or rotating students through a prescribed set of activities, is one means of keeping costs down. Another way is to use a simulator or multipurpose equipment. Finally, some schools may receive surplus or donated equipment from local businesses for use in the classroom.

- *Instructions* outlines the steps for conducting the activity and the teacher's role in facilitating it. This includes any physical, mental, or organizational work to be done prior to beginning the activity. Some activities require short-term preparation, whereas others, such as arranging work-based learning experiences, may need longer planning time. Special instructions to the teacher may include recommendations regarding team work and/or individual student work, safety considerations, and the best instructional techniques to use. Special instructions to the student may include the steps to complete the activity and the skills and concepts they are expected to learn, along with the measures of success.

- *Academic Integration* suggests ways to teach the language arts, math, and science skills that are part of the curriculum framework. For example, an academic and a vocational teacher may team teach a unit to help students understand the relevance of the academic skills in the context of the workplace. In another situation, the teacher may design an activity that taps students' higher-level thinking and problem-solving skills as they perform, create, or produce something. Teachers may find the Arizona Academic Standards helpful in determining the level of proficiency required for the academic skills.

- *Assessment Strategy* measures improved attitudes and/or behaviors and assesses the acquisition of new knowledge and skills. There are a number of alternative methods to evaluate students' progress: team projects, component exercises, portfolios, demonstrations, written reports, verbal presentations, and so forth. The evaluative criteria from the vocational curriculum frameworks and the Arizona Academic Standards may be used to determine the standards for evaluating student outcomes.

- *Resources* refers to teacher support materials for use in tailoring instruction to best meet the course objectives and to maximize student learning. The resources may be in the form of teaching aids, assessment materials, student texts, curriculum guides, multimedia programs, computer software, and so forth. In addition, advisory committee members may suggest industry manuals and other training materials that may be used in the classroom.

Tech Prep Programs. One high school teamed with the community college to design four programs that offer advanced placement at the community college. This form of articulation actually shortens students' college programs and gives them early eligibility for the job market. A student must meet the standard high school graduation requirements and complete the courses listed below to be considered a tech prep program completer:

Nursing Assistant *Health Services Career Pathway*	**Administrative Information Services** *Business Systems Career Pathway*	**Construction Technologies** *Engineering/Industrial Systems Career Pathway*	**Child Care & Guidance/Elem. Ed.** *Social/Human Services Career Pathway*
Required: Biology I A/B Medical Terminology/ Health Occupations Medical & Nutritional Science Business Partnerships Nutrition A & B Recommended: Math (2 years) Biology II Chemistry & Advanced Chemistry Keyboarding STRIVE (co-op ed) College courses: Nursing Assistant or Basic EMT	Required: Keyboarding Introduction to Business Word Processing/ Communications Spreadsheet Management Data Management Recommended: Desktop Publishing Accounting I & II Notes Business Law DCE (co-op ed)	Required: Technology System-Construction Technology System-Engineering Framing Carpentry I & II DCE Recommended: Math Technical Drawing Architectural Drafting Introduction to Business Accounting I	Required: Business Partnerships Guys, Gals, and Kids Child Care I & II Child Dev. Assoc. Prep Advanced Child Care Recommended: You, The Person Family STRIVE (Child Care) Student planning to enroll in the university's elementary education program should meet all university entrance requirements.
Articulated Community College Programs Nursing AS Degree Paramedic AS Degree	**Articulated Community College Programs** Secretarial Science Degree Medical Secretary Degree Legal Secretary Degree	**Articulated Community College Programs** Construction Admin. Electrical Option Heating/Refrig. Option	**Articulated Community College Program** Child Care Associate **Articulated University Program** Elementary Education

Youth Apprenticeships. This program is for students ages 16 or older. It integrates academic instruction in secondary and postsecondary schools with on-the-job training at a level to certify students for entry-level jobs. Following is an example of an apprenticeship program.

On-the-job training was only half of the learning experience of the students in this Manufacturing Apprenticeship Program. The academic component was equally important. The local college leased space for classes and office and support staff for the teachers. Planning, which took place when students were at the worksites, was essential to the academic approach–the total integration of coursework. Teachers wanted students not only to see that math, science, English, and social studies were interrelated but to understand how such skills were required at work.

- *English:* Timeline, journal entries, outline writing, interviewing skills, argument writing skills, verbal reporting skills, letters of appreciation, letters of inquiry, work and metalworking terminology.

- *Math:* Division, multiplication, addition, and subtraction of whole numbers; percentages; areas of triangles, squares, and circles; volume of rectangular solids and cubes; place value, reading and writing decimals; converting fractions and decimals to percentages and vice versa; statistics introduction.

- *Physics:* Measuring mass, length, time; SI units; factor-label methods; scalar vs. vector; force as a vector; resultant, equilibriant; graphical analysis; stress, strain Y modules; simple machines--work; temperature scales; density.

- *Chemistry:* Bohr model of the atom, introduction to the Periodic Table , atomic weights and numbers, types of bonds, polymers defined, wood and plastic under stress, chemical industry and process associated, polymer making, polymer types/costs.

- *History/Social Studies:* Evaluation of materials used in the making of monuments, reason for grouping infant death rates by death dates, trees and their uses, early American craftsmanship, impact of craft–made things to last.

Projects were the staple of the curriculum rather than textbooks. This meant that teachers had to understand current and future trends and how a project might lead to solutions. Teachers brainstormed ways to integrate the academic disciplines; demonstrations, discussions, practice, and peer teaching were the teaching strategies used.

Follow-up 1 year after the completion of the program found that of the original 11 apprentices, only 1 was neither working nor in school. Seven were in college or at the university, one was working in a family-owned business, another was looking for a job, and the last was working full-time and hoping to become a teacher. A site evaluation indicated that there were some obstacles. A program's success depends primarily on the quality of teachers and mentors and industry's willingness to cooperate. State regulations

and the ability to overcome existing school bureaucracy was sometimes an issue. Money was another. Finally, ties to postsecondary education were not always clearly established.

4. Promotional Tactics

There are many approaches to promotion: advertising, public information, personal contact, group presentations, and direct mail. In addition, information can be distributed through a variety of public sources: newspapers, fact sheets, professional association newsletters, TV, and radio. Finally, information should be provided in easy-to-comprehend language and in various formats

Messages for Different Audiences. Effective promotion depends on communicating the right message at the right time to the right people. All messages should explain the benefits of career pathways. Following are messages that can be used in fact sheets, brochures, letters, presentations, and videos for target audiences:

- *Tell K-12 educators:* Career pathways are for all students–those who join the work force immediately after graduating and those who go to college.

- *Tell postsecondary educators:* Career pathways prepare students to learn advanced skills and concepts. Less review and remediation will be needed and students can master more advanced material.

- *Tell business:* Career pathways help students understand that learning is a lifelong activity which prepares them to meet the changing expectations at the worksite.

- *Tell labor:* Career pathways mean better trained workers which means a more profitable, efficient operation for everyone.

- *Tell parents:* Participating in career pathways will help your son or daughter become a productive, self-supporting adult.

- *Tell students:* Career pathways can start preparing you for a well-paying, respected career while still in high school.

Mixed audiences may require a series of messages that describe overall benefits of career pathways. Following are examples of messages that work especially well in videos, fact sheets, and large group presentations.

- Career pathways *create high expectations for learning*. In addition to high-level academic and in-demand occupational skills, students acquire good work habits and workplace attitudes. These skills will enable them to compete for well-paying jobs and career advancement.

- Career pathways *involve employers in developing the curriculum*. Employers work with teachers to develop the curriculum and sometimes they help teach the curriculum. They also sponsor cooperative education programs, mentoring, job shadowing, and internships for both teachers and students.

- Career pathways *help students make career decisions*. With the help of teachers, counselors, and parents, students can plan their learning experiences. They know what courses they need and they know when they will take them. They can see a direct relationship between each course and the career pathway which they have chosen.

Special Events and Activities. There are many effective ways of promoting career pathways. Events and activities can be planned for a single target audience or combined audiences. Following are examples of such activities:

- *For K-12 educators*: Provide career pathways workshops on a regular basis. Focus on a variety of topics such as work-based learning experiences, integration, team teaching, and so forth. An ongoing workshop series emphasizes the importance the district places on career pathways.

- *For postsecondary educators:* Invite postsecondary instructors to be part of a curriculum review and update session. This is especially important to ensure that high school courses articulate with college courses.

- *For business:* Meet with business leaders. Make a video or media presentation and distribute information packets that describe career pathways and offer ideas about how they might participate. Allow time for questions and answers. Ask them to fill out cards to request more information or to indicate that they are interested in participating.

- *For labor*: Ask unions to help organize a day when students are invited to go to work with a parent to see what the real world is like. Or, ask them to sponsor a career pathways newsletter which features stories about teachers and students.

- *For parents*: Hold a career pathways night and invite business, labor representatives, and parents. Have teachers and students describe how their courses relate to the world of work. Postsecondary teachers can explain how high school classes articulate with their programs.

- *For students*: Plan a job shadowing experience for students to be followed by an introduction to career pathways. Or, invite parents to the classroom to make presentations about their jobs and the skills they need for their jobs.

These are only a few ideas for promoting career pathways. See *Career Pathways: An Implementation and Resource Guide* for additional ideas.

Section VIII. School and Classroom Activities

There are a number of activities that support the career pathways concept. These activities can be implemented in a single classroom and/or across classes/disciplines. Following are descriptions of 12 activities. These activities can be used as they are described here or modified to accommodate the situation and the environment.

1. Freshman Orientation Night
2. Career Fair
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1. Freshman Orientation Night

Eighth graders and their parents are given a tour of the high school and 5-minute presentations on each high school program. The presentations are made by upper class students and teachers to inform parents and in-coming students about programs, curriculum, and other educational opportunities. The presentations are followed by 20-minute sessions with a counselor, the student, and his/her parent or guardian. The purpose of the session is to explore career pathways and plan the student's freshman year schedule.

Students and parents are given a course book which contains information about the career pathways, courses, and extra-curricular activities. Icons representing each pathway are used throughout the course book to make it easy to find the right courses for the career pathway a student is interested in. The course book also contains a chart showing the graduation requirements for each grade level depending on the type of diploma a student gets: college preparatory, standard high school emphasis, or vocational emphasis.

2. Career Fair

A career fair is a great way to involve teachers, students, and the community in exploring career options. The career fair could be held at the school, the community center, or even at a local park and recreation center. Teachers are responsible for inviting business representatives to participate. The business representatives are given tables to display career information and company materials. The tables are arranged by career pathways with a minimum of two people representing each pathway. (The idea is to demonstrate that there are many occupational options available to students in each pathway.) Students follow these guidelines:

1. Fill out a name tag at the registration table.
2. Visit as many tables as you can.
3. Introduce yourself to the business representatives.
4. Ask the following types of questions:

   What career opportunities are available at your company?
   What qualifications, education, and training do I need to work for your company?
   What are the working conditions for jobs in your company?
   What type of work schedule do you follow?
   What type of training does your company offer its employees?
   What do you like most about your career? least?
   What special advice would you give to a person entering this career?

In addition to answering students' questions, the business representatives could demonstrate a technique, have students try a job-related skill, or support a game or contest. To "kick-off" the fair, students could gather for a motivational session led by former students who talk about their experiences in the workplace. At the conclusion of the fair, students complete the Career Fair Evaluation and return it to the registration table. (See the following forms.)

Career Fair Evaluation

Student Name _____

We hope you enjoyed the Career Fair. Please take a few minutes to complete this evaluation and return it to the registration table.

1. The business representatives I met discussed careers in–

2. Something interesting I learned was–

3. I am considering a career in–

4. To be successful in this career I need to–

5. The thing I liked the most about the career fair was–

6. The thing I liked the least about the career fair was–

7. I need additional career assistance. ____ Yes _____ No If yes, explain the kind of assistance you need.

3. Personal Business Cards

Have students design their personal business cards. This activity could serve several purposes. The computer teacher could use this activity to teach students about the features of a software program and at the same time design a product that conveys a message about the student. Following a lesson on entrepreneurship, the business teacher could have students design their business cards with their company's name, address, and logo and then hold a contest to determine the most original business card. The English teacher might use the business cards as a way to have students practice introducing themselves to one another. The business cards could also be used at the Career Fair which was described in example two.

4. Workplace Partners

Collaboration between educators and employers is crucial when organizing programs which align with the workplace. Failure to integrate employers fully into such programs will leave them with little connection to work and, therefore, limit students' success. There are many ways workplace partners can contribute:

- By serving on planning, advisory, and governance committees
- By providing internships for school staff
- By conducting tours of the workplace for students and teachers
- By formulating occupational skill standards
- By developing school- and work-based curricula with educators
- By providing feedback on the workplace skills of graduates
- By speaking or teaching in the classroom
- By donating facilities, materials, equipment, and supplies
- By offering work-based learning experiences for students
- By loaning employees to serve as workplace mentors
- By recruiting other workplace partners
- By directing students to job openings

Although employers may commit to work-based learning activities, it is usually the employees who mentor, teach, and guide students in these experiences. Employees can contribute in the following ways:

- By teaching students and teachers about careers and jobs
- By identifying workplace knowledge, skills, and behaviors
- By developing real-world problems and solutions for the classroom
- By providing classroom instruction
- By mentoring students at the worksite
- By evaluating or assessing student work
- By recruiting others

5. Career Research

Ask students to research the career of their choice and write a one-, two-, or three-page paper. The paper should include examples of occupations/jobs, training and education requirements, job duties and responsibilities, salary information, forecast information, and a discussion about why the student thinks he/she is suitable for this type of work. The rubric below may be used to grade students' papers.

Grading Rubric

For an A:	For a B:	For a C:
• Paper is three typewritten pages. • Jobs, job settings, and job responsibilities are explained in detail. • Examples of training and education requirements are explained in detail. • Salary is explained with reference to trends. • Job forecast is explained with reference to trends. • Argument for suitability of job to students is plausible. • Spelling and punctuation have been checked. • References are included. • Paper has a cover sheet with illustration related to the job of choice. • Career sources (3 or 4) are listed.	• Paper is two typewritten pages. • Two jobs are described • two examples of education and training are given. • Beginning, median, and high salaries are given and explained. • Past and future availability of jobs is compared. • Suitability of job is discussed. • Spelling and punctuation have been checked. • References are included. • Paper has a cover sheet. • Career sources (2 or 3) are listed.	• Paper is one typewritten page. • Related jobs are listed • Education and training is discussed. • Beginning and experienced level salaries are given. • Job forecast is discussed • There are a few spelling and punctuation errors. • Reason for interest in career is vague. • References are included. • Paper has a cover. • Career sources (1 or 2) are listed.

The students' research should be followed up with a class discussion. This could be accomplished by having all or selected students share their findings. Following are three additional career research activities:

- Have students interview adults in careers that are not traditionally held by their gender, for example, a male nurse, a female pilot, and a male day care worker. Students should find out if the person had any difficulty entering their career, if they enjoy their work, and if they would recommend the career to others. Students can report their findings back to the class.

- Have students research famous people who entered careers and succeeded despite barriers along the way. Examples are Stephen Hawking, the physicist who overcame physical disability; Sally Ride, the astronaut who overcame gender bias; Nelson

Mandella, the politician who overcame racial bias; Ludwig von Beethoven, the musician who overcame deafness; and Glen Cunningham, the international track star who overcame a badly burned leg. Ask students to share their research with the class.

- Have students research their career of choice and complete the following exercise:

The career that I researched: _____

_____	+	_____	+	_____	=	_____	70	-	_____	=	_____
A		B		C		D			D		E

1. Write your age on Line A.
2. Write the number of years you have remaining in high school on line B.
3. Write the number of years of training or college you will need for this career on line C.
4. Add your age and remaining years together and write the sum on line D.
5. Subtract the total from line D from the number 70 (which represents the average age of retirement). Write the remainder on line E.
6. Line E represents the number of years that you will probably work during your lifetime.
7. Do you think it is worthwhile preparing for a chosen career when you consider the length of time you will be working? Why or why not?

6. Worksite Visit and Tour

One way students can learn more about jobs and the work environment is to tour the work facility and talk with actual workers. To make this a truly meaningful event, the students can make all the arrangements themselves. For example:

- Committee one surveys the students for the jobs and worksites they would like to visit.
- Committee two researches possible locations.
- Committee three calls and schedules the tour.
- Committee four writes a "thank-you" letter to the company and its representatives.
- Committee five leads the class in a discussion about what they learned.

As a follow up to the visit, ask students to write job descriptions based on the people they met and the information they acquired. At minimum, these descriptions should identify the duties and responsibilities, the education and training, and the job experience requirements. For effective worksite visits and tours see the *Planning Checklist* and *Pre-Visit Activities*. For additional follow-up activities, see *Post-Visit Activities*.

Planning Checklist

- [ ] Determine the objectives for the visit and tour
- [ ] Select a destination that will best meet the objectives
- [ ] Request the administrator's permission
- [ ] Contact the site to be visited. Obtain the name of the contact person, and discuss–
  - date of visit
  - time of arrival
  - duration of visit
  - size of group
  - objectives of visit
  - luncheon accommodations, if needed
  - number of chaperones required
  - grade/age level of students
  - interests/abilities of students
- [ ] Determine the cost of the trip, if any
- [ ] Contact the host 1 or 2 days prior to the visit to confirm
- [ ] Arrange transportation
- [ ] Obtain a signed consent form for each student
- [ ] Invite chaperones
- [ ] Prepare students:
  - Discuss the value of taking notes, taking pictures, paying attention, etc.
  - Develop questions concerning activities being observed
  - Discuss guidelines for behavior on the trip including dress, courtesy toward host and chaperones, and obedience to safety rules
  - Confirm the itinerary for arrival and departure

Pre-Visit Activities

- Research the site
- Develop questions for the host
- Identify appropriate dress for the visit
- Identify what students will see
- Identify what information students should be seeking

Post-Visit Activities

- Conduct additional research on the site or topic
- Discuss the information students gathered
- Write a summary of the visit
- Identify and describe occupations and skills observed at the site

7. Service Learning Experience

Service learning contextualizes students' learning by providing an environment for students to acquire organizational, team, and problem-solving skills which are necessary for work and learning. Some examples of service learning activities are culinary arts students preparing nutritious meals for homeless shelters, health occupations students volunteering at community blood drives, and building trades students working with Habitat for Humanity to build homes for low-income families.

There are an abundance of service learning activities available for teachers to add to their curriculum. The first time is the hardest, but teachers do all kinds of hard things every day. For information, including model service learning projects, try some of these web sites on the Internet:

- The Big Dummy's Guide to Service Learning
  www.fiu.edu/time4chg/Library/bigdummy.html

- American Association of Community Colleges of Service Learning
  www.aacc.nche.edu/spcproj/service/service.htm

- The Learn & Serve America Home Page
  www.cns.gov/learn.html

- The International Partnership for Service Learning
  www.studyabroad.com/psl/pslhome.html

- Maryland Student Service Alliance
  http://sailor.lib.md.us/mssa/index.html

8. Job Shadowing

Ask each student to select a career that interests him/her and a career site. Tell the students to contact the Human Resource Director at the career site and request an opportunity to "job shadow" for a minimum of one day. Tell students that the process of applying to job shadow–making the initial phone call, meeting with the Human Resource Director to discuss the shadowing experience, and participating in shadowing–parallels applying for a real job, interviewing for the job, and securing a job. Stress to students that they should take this activity as seriously as applying for a real job. Remind them that they will be visiting potential employers and that their job shadowing experience may lead to a real job.

Students should complete the *Job Shadowing Research Sheet* prior to their appointment with the Human Resource Director, and they should complete the *Job Shadowing Questionnaire* immediately after the shadowing experience.

Job Shadowing Research Sheet

Complete the questions below before you meet with the Human Resource Director.

Information about you. . .

1. How did you become interested in this career?

2. What skills do you currently have that could be utilized on this job?

3. What skills do you anticipate gaining in the future that could be utilized on this job?

4. What do you hope to gain from exploring this career?

continued on next page

Information about the company. . .

It is important to be familiar with the company before you visit. To find out about the company, you might request an annual report and information brochures, conduct an Internet search, or check newspaper files in the local library.

1. What are the goals of the company?

2. How long has the company been in business?

3. How many people does the company employ?

4. Is the company currently hiring? If yes, for what positions? What are their hiring projections?

5. What types of skills are needed to be hired in your career of choice at this company?

6. Did you discover anything unique or unusual about this company?

Job Shadowing Questionnaire

Name: _____ Career Interest: _____

Complete this form after you job shadow.

1. Whom did you shadow, what job, what company?

2. What brought this person to this particular career?

3. What kind of training and education is required for this job?

4. What does this person like best about his/her job?

5. Are there any drawbacks to this job?

6. Did anything in particular surprise you about the job or the company?

7. What advice did the person have for someone with your career interest?

8. Do you still think this is the career for you? Why or why not?

DON'T FORGET TO WRITE A THANK-YOU LETTER TO THE COMPANY AND THE PERSON YOU SHADOWED.

9. Resume and Cover Letter

The purpose of this activity is to help students prepare a resume and cover letter. This is an excellent activity to include as part of a class on communication skills and/or employability skills. Below is an outline that can be followed easily or modified according to the students' needs and the situation.

1. Tell students that the resume is the primary means for introducing themselves to employers. It should highlight the skills and experiences that make them the ideal candidate for the job. General guidelines are as follows:

    - *Name, address, and telephone number.* If necessary include both your temporary and your permanent addresses and phone numbers. If you can't be reached during the daytime, provide a number where the caller can leave a message.

    - *Objective*. This statement should describe the kind of work you are currently seeking. If you will be sending your resume to several employers, you can write a general objective that will apply to all of the jobs.

    - *Work experience*. Start with your current job. If you have lots of experience, limit your list to the most recent or most important jobs. For each job, state the employer and location, months and years when you started and left the job, and the position you held. Include a brief description of your responsibilities. For each entry start with either your title or the company name.

    - *Education*. Starting with the highest level of education you have attained, list each school on a separate line. Include the name and location, the years you attended, and the diploma, degree, or certificate you earned. If you took courses or participated in clubs or other activities that provided you with particular skills, list them. Also, mention high grades, scholarships, or other academic distinction you may have earned. If you don't have much work experience, organize your resume so that the education heading and information comes before the work heading and information

2. The main purpose of the cover letter is to get the employer to read the resume. General guidelines are as follows:

    - Start the cover letter by stating why you are writing. If you are sending a resume because you heard about a job opening, say where you heard about the job. If someone the employer knows has suggested that you write, mention that person's name if he/she gave you permission to do so.

    - In a sentence or two, explain why you think you're the right person for the job.

    - Refer to your resume by calling attention to a particular fact in your resume.

    - In the last paragraph, ask the employer to contact you so that you can meet and discuss your qualifications.

3. Now, practice preparing a resume and a cover letter. You may use the *Resume* and the *Cover Letter* handouts.

Resume

Directions: Use this sample resume and the answers to the questions below to help you write a resume.

Sue Edwards
912 Mitchell Avenue
Tempe, AZ 85287
Phone: 602-555-1234

Objective: Position as secretary

Work Experience:

August 1997 to Present — Receptionist/Typist. Mesa Community College
Answer phone, do typing and filing. Do data entry on computer.

August 1996 to June 1997 — Part-time Office Assistant. Tri-County Insurance
Answered phone, did typing and filing, helped process insurance claims.

Education:

Mesa Community College. Currently taking courses in Information Systems

Mesa Community College. Certificate in Business and Office Skills in 1997.

Mesa High School. Graduated in 1996 with a B+ average. Completed the Administrative Information Services Program and an internship with Brown and Brown, Associates. Was a member of Future Business Leaders of America and the Debate Team.

Answer these questions on a separate sheet of paper:

1. What personal information should I list on my resume?
2. What is my objective?
3. Which jobs should I list?
4. What education and training do I want to highlight?

Cover Letter

Directions: Use the sample cover letter and the scenario below to write a cover letter for your resume.

Sample Cover Letter

912 Mitchell Avenue
Tempe, AZ 85287
July 1, 2000

Mr. Michael Jones
Personnel Director
Jones, Inc.
One Jones Plaza
Phoenix, AZ 85007

Dear Mr. Jones:

I would like to apply for the position of secretary that you advertised in today's *Arizona Republic*.

As you can see from the enclosed resume, I have both educational training and clerical work experience. I have excellent communication, organizational, and computer skills. I am very eager to advance into a secretarial position such as the one you have available. I feel that, given a chance, I will be an asset to your company.

I would like to meet with you to discuss my qualifications for this job. You can contact me at 602-555-1234.

Sincerely,

Sue Edwards

Scenario

A friend of your parents is a supervisor at the Alpha Company. She told you that the company is looking for people with your qualifications. She suggested that you send your resume to John Smith and gave you permission to mention her name.

After you write your letter, check off the items listed below to determine how well you did:

- ____ Have I explained why I am writing?
- ____ Does the letter indicate the kind of job I am seeking?
- ____ Have I stated why I think I am the right person for the job?
- ____ Have I referred to my resume?
- ____ Have I asked the employer to contact me?
- ____ Does the letter call attention to my resume in a favorable way?

10. On-line Job Search

The purpose of this activity is to help students enhance their job search skills, investigate the Internet as an resource, and expand their knowledge about careers and jobs. Ask students to identify a career area for which they will conduct an on-line job search. Explain that different on-line resources provide varying amounts of information. Remind them to record the information they find during their search. This information may include the on-line service they used, salary range, education/training needs, and location of the job. The list below identifies free on-line job search sites. You may choose to make the entire list available or select one or two sites for students to use.

General Job Searches

http://www.occ.com
On-line Career Center. The oldest and most frequently used on-line career center. Includes national and international postings.

http://www.monster.com
The Monster Board. One of the largest internet job boards, with more than 50,000 job postings. Includes national and international listings. Offers on-line resume building.

http://www.iccweb.com
Internet Career Connection. Provides national and international job listings and a link service to other career and education sites.

http://www.espan.com
E-Span. Great for technical and nontechnical positions. Allows you to post your resume on the internet for employers to review.

http://www.careerpath.com
Career Path. Combines recruitment ads from six major newspapers, including the Washington Post, Los Angeles Times, and Chicago Tribune.

http://www.career mosaic.com
CareerMosaic. Lists national and international jobs. Ability to post your resume on the Internet for employers to review. Lists recruitment events nationwide.

Specialized Job Searches

http://www.jobsfed.com
Federal Jobs Digest. The largest private source for listing of U.S. federal job postings.

http://www.academploy.com
Academic Employment Network. Specializes in education employment opportunities.

http://www.tcm.com/hr-jobs
Human Resources Job Mart. Specializes in job placement in the area of human resources.

http://www.banking-financejobs.com
National Banking Network. The oldest and largest private recruiting firm specializing in banking and finance.

11. Job Leads and Job Applications

Brainstorm with students to determine sources for job leads, criteria for evaluating job leads, networking techniques, and entrepreneurial options. Ask each student to collect information on two job leads, analyze the descriptions for these jobs, and match their personal qualifications to the jobs. Show the students three or four job applications. Have them identify and discuss the information requested on the applications. For practice, have students complete one of the applications. When they have completed it, ask each student to partner with another student and critique one another's application for neatness, completeness, and accuracy.

12. Mock Job Interview

Students form teams of three. Each team decides who will be the interviewer, the applicant, and the observer. The interviewers make a list of questions to ask the applicants. The applicants use the *Job Interview to Do List* and the *Nonverbal Communication* handouts to prepare for the interview. The observer uses the *Interview Skill Checklist* to evaluate the job interview. After all the interviews are completed, the observers share their observations.

Additional activities might include the following:

- Invite a guest speaker from your field of choice to talk about his/her experiences in interviewing and hiring new employees. Prior to the presentation, ask the speaker to cover such things as personal qualities that prospective employees need and job skills that employers look for in new employees. At the end of the guest speaker's presentation, ask him/her to demonstrate an interview with a student in front of the class. As the interview takes place, point out effective elements to the class.

- Ask students to write a follow-up letter to an interviewer. Have them exchange the letter with other students for editing of content and mechanics.

- Work with students to brainstorm the factors that contribute to job success. The *Success on the Job* exercise is used to motivate students' thinking about job success.

  (Handouts follow.)

Job Interview To Do List

1. Self Analysis. Review your personal background as it relates to the employer and to the job for which you are applying.

   What skills do I bring to this situation?
   How do I meet the general requirements of the job?
   Why do I want to work for this organization?
   What are my strengths and weaknesses?
   How have my education and experience prepared me for this position?

   Doing this kind of analysis or self-assessment should help you enter the interview with enthusiasm, poise, and self-confidence.

2. Researching the Company. Learn about the company's history and background. Being able to converse intelligently about the employer will create a favorable impression regarding your maturity and initiative.

   Know the product(s) and/or service(s).
   Know who the company's competitors are.
   Know organizational goals/objectives, management style/philosophy, hiring policies.
   Learn functions, departments, salary trends, backgrounds of people with certain positions.

3. Attitude and Appearance. You only get one chance to make a positive first impression. With that in mind, don't let your attitude and appearance undermine your chances for success. Remember, how you present and project yourself should create an impression of maturity, confidence, and professionalism. Here are some suggested strategies:

   Suggested apparel for men is a dark business suit, conservative shirt and matching tie, polished dark shoes and dark socks.
   Suggested apparel for women is a dark business suit or conservative dress/jacket, well polished pumps (closed toe) with moderate heel.
   Pay close attention to hygiene and hair styles.
   Be positive, interactive, proactive.
   Let your enthusiasm shine through.

4. Materials. Being prepared with the following materials will help make a good first impression.

   An employment application that is correctly and neatly completed.
   A complete and current resumé.
   Writing materials.
   Money for parking.
   Address of and directions to the interview location.

5. Sample Interview Questions. Many people perform poorly during interviews because they have not prepared answers to possible questions. Although you have no way of knowing exactly which questions will be asked, certain questions are generally included in any interview. Read the following commonly asked interview questions and practice answering them.

   Question *In what type of position are you most interested?*
   Answer Tell the interviewer what skills you have learned. If you have earned a competency certificate or occupational readiness record, provide a copy.

   Question *What jobs have you held in the past? Why did you leave your last position?*
   Answer Tell about your previous job experience. Be honest, but positive, about why you left.

   Question *What pay do you expect?*
   Answer Do your homework on this question. The application form or job advertisement should provide you with information about salary/wages. If you don't know it is best to say "the salary is negotiable." Find out beforehand what the current wage/salary information is for the position and use that as a basis for your answer.

   Question *How long do you expect to work for us?*
   Answer No company wants to train someone who is going to leave shortly thereafter. Unless the job is seasonal, don't fix a leaving date as your answer.

   Question *What school activities did you participate in while in high school?*
   Answer When you answer this question, include all clubs, organizations, and athletic activities in which you participated. Membership in vocational student organizations and leadership positions should especially be mentioned.

   Question *Do you plan to continue your education or training?*
   Answer All companies want to hire employees who keep current with developments in the industry. Express a willingness to continue education and/or skills training.

Nonverbal Communication

Be aware of nonverbal communication that takes place during the interview. Punctuality, posture, facial expression, eye contact, tension, energy level, time and space sensitivity…all will give the interviewer some clues about sincerity, attitude, temperament, and enthusiasm about the position and organization. Be sure you are communicating what you intend. Here are some strategies to help you communicate nonverbally during an employment interview.

- Keep good eye contact with the interviewer. Don't stare, but establish frequent contact with the interviewer's eyes. This will help personalize the interview.
- Sit comfortably with shoulders fairly erect but not stiff.
- Do not simulate the recruiter's manners or behavior.
- Use facial expressions…smile.
- Try to keep enthusiasm in your voice throughout the interview.
- Be an attentive and eager listener. Reinforce the recruiter's comments with nods and approving "ahs" just as he/she does with you.
- Have a firm handshake. Lean into it. Bend your arm at the elbow when you shake hands. Don't lock your arm at the elbow and give a stiff handshake as if trying to push the interviewer away or keep him/her at a distance.
- When sitting, lean forward and toward the interviewer rather than leaning back and away with arms folded.
- Let your body do what it does naturally…let it communicate unity. Gesture with your head and body when you emphasize points.
- Dress neatly and appropriately for the position. Pay special attention to breath, finger nails, and other items of personal hygiene.

After the Interview

Evaluate the interview. Ask yourself these questions:

How well did I present my qualifications?
What points seemed to interest the employer?
How can I improve on my next interview?
Be sure to note the interviewer's name and business address.

Follow up the interview. A letter is the most effective method of following up an interview. The letter should be prepared and mailed immediately after the interview so that it arrives within a few days. Many experienced job seekers have the follow-up letter prepared prior to the interview.

The follow-up letter doesn't have to be long or complex. Three paragraphs are usually sufficient:

Paragraph #1 Thank the person for the opportunity to interview for the job.

Paragraph #2 Include information you may have overlooked during the interview. This additional information may give you an edge over other qualified applicants.

Paragraph #3 Indicate that you are still interested in the job. Make a positive comment about your ability to do the job.

Interview Skills Checklist

Use the following checklist to evaluate the mock interview.

		Yes	No
1.	The applicant offered to shake hands with the interviewer.	( )	( )
2.	The applicant remembered and used the interviewer's name correctly.	( )	( )
3.	The applicant maintained poise by sitting attentively but easily in the chair.	( )	( )
4.	The applicant spoke clearly and used standard English during the interview.	( )	( )
5.	The applicant asked significant questions about company working conditions and benefits.	( )	( )
6.	The applicant was prepared for the interview and had pencil/pen, copy of resume, and skill certificate.	( )	( )
7.	The applicant was dressed appropriately for a job interview.	( )	( )
8.	The applicant maintained effective eye contact with the interviewer.	( )	( )
9.	The applicant offered a copy of his/her resume.	( )	( )
10.	The applicant was on time for the interview.	( )	( )

Success on the Job

Directions: Circle the best answers, and then discuss your answers with your classmates.

1. When there is a conflict between your work schedule and your social life you should–
   a. call in sick.
   b. talk to your supervisor.
   c. get someone to cover for you.
   d. cancel your social plans.

2. When you like your job and a disgruntled employee confronts you with a lot of complaints you should–
   a. discuss how you get past some of these same obstacles.
   b. tell him/her to get a life and solve their own problems.
   c. discuss his/her complaints with the supervisor.
   d. talk about his/her complaining to coworkers.

3. When a customer asks directions to a specialty department you–
   a. point him/her in the right direction.
   b. tell him/her to ask someone else.
   c. refer him/her to the store directory.
   d. provide him/her with clear directions.

4. When your friends want you to go to a concert on Friday night and you have already asked your supervisor for Saturday night off, you should–
   a. call in sick.
   b. tell your supervisor you need both nights off.
   c. make a decision as to which night you want off and talk to your supervisor.
   d. tell your friends "thank you" but you have to work.

5. When you have been bothered by another employee constantly you should–
   a. avoid this person.
   b. report further incidents to the supervisor.
   c. talk about this person to other employees.
   d. quit your job.

IX. Technical Assistance and Resources

Onsite Workshop and School Site Visit

Customized Career Pathways Workshop. A workshop at your site will increase your knowledge of Career Pathways and how they can be used to coordinate your school's or district's curriculum delivery, career counseling, and extracurricular activities; will explore ways to understand, plan, develop, and implement career pathways; and will develop an action plan to guide planning and implementing strategies. An onsite workshop requires a minimum of eight participants and should include teachers, counselors, and administrators. To schedule a workshop, contact: Arizona State University, Office of Vocational Education, at 602-965-8015.

Career Pathways Site Visit. Talk to other teachers, counselors, and administrators and learn the strategies they used to implement the career pathways. See the materials they are using to introduce career pathways to students and parents. Learn about their plan to gain support for career pathways throughout the district and community. This opportunity is available to teachers, counselors, and administrators of grades 7-12. To obtain an application for a site visit, contact: Arizona State University, Office of Vocational Education, at 602-965-8015.

Arizona's Career Pathways Resources

Career Pathways: An Implementation and Resource Guide is designed for teachers, administrators, and counselors who are interested in implementing the career pathways. Section one provides information about the philosophy and benefits of career pathways. Section two describes implementation strategies and outlines an adaptable career pathway presentation. Section three contains ideas for promotional materials, directions for using the *Student Guide*, and sources of career information. For further information, contact the Arizona Department of Education, School To Work Division, at 602-542-5352.

Career Pathways: A Guide for Students and Families is designed for 6th- to 8th-grade students and their parents or guardians. The guide covers a four-step process for making career decisions, a brief description of each pathway, sample surveys, a self-inventory and worksheet, and a planning chart for the student's career choice. For further information, contact the Arizona Department of Education, School To Work Division, at 602-542-5805.

Career Pathways Management Plan. This plan includes a series of steps that can be used by educators and community supporters who are at the action planning stages of developing and implementing a career pathways system. A copy of this plan is found in Section II of this document.

A Career Pathways Assessment Model: Impact on Students, Schools, and Community. This assessment model serves as a guide to schools/districts who may wish to conduct local evaluation of career pathways. Individual surveys are included for administrators, business partners, students, and teachers. A copy of these assessments is found in Section III of this document.

Arizona Career Pathways Contacts

The following people are available to share their experiences in implementing career pathways:

Amphitheater Unified District
Angela Julien
Amphitheater High School
125 West Yavapai Road
Tucson, AZ 85705
Phone: (520) 696-5373

Blue Ridge Unified District
Chuck Waldo
Blue Ridge High School
1200 W. White Mountain Boulevard
Lakeside, AZ 85929
Phone: (520) 368-6328, x769

Deer Valley Unified District
Janet Altersitz
Desert Sky Middle School
5130 West Grovers
Glendale, AZ 85308
Phone: (602) 866-5825

Dysart Unified District
Vickie Van Roekel
Dysart High School
11405 N. Dysart Road
El Mirage, AZ 85335
Phone: (602) 876-7568

Mohave Union High School District
Jon Lindberg
Mohave Vo-Tech Services
4182 North Bank Street
Kingman, AZ 86401-2715
Phone: (520) 692-2010

Tempe Union High School District
Georgia Merrick
Tempe District Office
500 W. Guadalupe Road
Tempe, AZ 85283
Phone: (602) 839-0292, x3723

Tucson Unified District
Arlene Doran
Menlo Park School
1100 West Fresno
Tucson, AZ 85745
Phone: (520) 617-6700

Career Exploration/Career Building Resources

Building Your Career: A Guide to Your Future. Susan Jones Sears and Virginia N. Gordon (Scottsdale, AZ: Gorsuch Scarisbrick Publishers; Phone: 602-991-7881)

Get a Life Personal Portfolio and Planner for Life and Career Development. American School Counselor Association (Herndon, VA; Phone: 1-800-401-2404)

INSIGHTS: A Self and Career Awareness Program for the Elementary Grades. T. Atkin, D. Cowan, G. Dunne, S. Palomares, D. Schilling, and S. Schuster (Spring Valley, CA: Innerchoice Publishing, 1991)

Integrating Academic and Vocational Education: A Model for Secondary Schools. Alexandra Penn and Dennis Williams (Alexandria, VA: Association for Supervision and Curriculum Development; Phone: 1-800-933-2723)

Life Work Portfolio. National Occupational Information Coordinating Committee (Washington, DC; Phone: 202-991-7881)

Managing Career Transitions: Your Career as a Work in Progress. Kit Hayes (Scottsdale, AZ: Gorsuch Scarisbrick Publishers; Phone: 602-991-7881)

The Career Adventure: Your Guide to Personal Assessment, Career Exploration, and Decision Making. Susan Johnston (Scottsdale, AZ: Gorsuch Scarisbrick Publishers; Phone: 602-991-7881)

The Career Fitness Program: Exercising Your Options. Diane Sukiennik (Scottsdale, AZ: Gorsuch Scarisbrick Publishers, Phone: 602-991-7881)

The following materials are available from the Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202. Phone: 1-800-669-2465.

Elementary Career Paths. (1997). Introductory look at career paths for K-4 students and their families. 30-1012-S Student Flier (30/pkg); $7.50.

Elementary Career Paths Poster. (1997). 3-color poster looks at six career paths and how they interact in a community setting. 30-1012-P Elementary Classroom Poster; $1.00.

Elementary Career Paths Teaching Tips. (1997). Provides instruction on incorporating career paths into the classroom. 30-1-013-I Instructor; call for price.

Exploring Career Paths-Middle/Junior High School. (1997). Answers questions about career paths for students and their families; takes students through a four-step process to help identify which career path fits best. 30-2-12-S Student; $1.00.

Exploring Career Paths-Facilitator's Guide. (1997). Resource guide for facilitators. Looks at ways to enhance activities in the middle/junior high school booklet and increase understanding of the six career paths. 30-2012-I Facilitator; $13.75.

*Career Paths Survey Course-Instructor Guide. (*1998). Authentic workplace activities are designed to offer flexibility in class time for nine weeks, semester, or yearlong classes. Instructor manual includes one copy of the student guide. 30-2020-I Instructor; $37.00.

Career Paths Survey Course-Student Guide. (1998). This guide offers students a broad exposure to six career paths for career exploration at the middle/junior high school level. 30-2020-S Student; $14.00.

Career Path Posters. (1997). Colored sets of seven posters covering six career paths. 30-3020-P Posters (set of 7); call for price.

Business, Management, and Technology Career Path Module. (1998). A teaching tool for instructors that provides work-based activities for high school students who have an interest in this path. 30-2022-I Instructor; $8.85.

Job Shadowing. (1997). Curriculum enhancement ideas to help students discover their interests in the world of work. Contains activities and forms helpful in establishing successful student job shadowing experiences. 30-8100-I Instructor; call for price.

National Guides and Directories

- *Occupational Outlook Handbook.* Published biannually, this document covers the top 250 occupations, or 85 percent of all jobs in the United States. It includes information on education/training requirements, working conditions, earnings, related occupations, and resources. An interactive version of the OOH is available on the U.S. Department of Labor's Internet Web Site: http://stats.bls.gov/oco/oco1000.htm.

- *Occupational Outlook Quarterly.* Published quarterly by the U.S. Department of Labor, this magazine includes many informative articles on labor market trends and best jobs.

- *U.S. Industrial Outlook.* This directory summarizes 350 major industries, including descriptions, forecasts, market trends, sales projections, and sources of additional information.

- *Encyclopedia of Careers and Vocational Guidance.* This directory is used in high schools and colleges for career exploration purposes. Published by Ferguson Publishing Company (Chicago), it examines hundreds of technical and high-tech occupations in addition to the standard career and job fields. It is also available on CD-ROM.

- *Specialty Occupational Outlook: Trade and Technical.* Published by Gale Research (Detroit), this directory includes information on 150 careers that do not require a bachelor's degree and do not appear in the OOH.

- *Specialty Occupational Outlook: Professional.* Published by Gale Research (Detroit), this directory provides insight into dozens of "professional" careers through questions and answers.

- *Vocational Careers Sourcebook.* This resource, published by Gale Research (Detroit), profiles 135 careers in the service industries, construction, sales, and other fields. It includes a summary of skills and responsibilities, salary levels, and growth potential, as well as descriptions of career guides, associations, test guides, certification agencies, educational programs, scholarships, reference books, periodicals, and meetings.

- *Careers Encyclopedia.* Published by NTC Publishing (Lincolnwood, IL), this source provides job descriptions, employment opportunities, working conditions, qualifications, advancement, and income for 200 careers.

Arizona Guides and Directories

- *Arizona College and Career Guide.* This annual publication provides a list of Arizona universities, colleges, and other postsecondary schools, along with accreditation, tuition, and program information. A curricula matrix for community colleges is included.

- *Arizona Economic Trends.* This quarterly newsletter provides information about employment, unemployment, earnings, and labor market trends in Arizona. Available from the Arizona Department of Economic Security. In Phoenix, phone 602-542-3871; elsewhere in the state, phone 1-800-321-0381.

- *Arizona Occupational Employment Forecasts-1994-2005.* This publication offers employment forecasts for over 600 occupations and tabular data for Arizona; the Phoenix, Tucson, Yuma, and Flagstaff metropolitan areas; and nonmetropolitan counties. Available from the Arizona Department of Economic Security. In Phoenix, phone 602-542-3871; elsewhere in the state, phone 1-800-321-0381.

- *Arizona's Economy.* This quarterly newsletter provides information about employment, earnings, and economic trends in Arizona. It also includes economic indicators for seven geographical areas, as well as periodic forecasts for Arizona, Phoenix, and Tucson. Available from the University of Arizona, College of Business and Public Administration, Publications Office. Phone 520-621-2155.

- *Arizona's Workforce.* This monthly press release provides employment and data and summarizes recent trends and developments in each of the 15 counties. Available from the Arizona Department of Economic Security. In Phoenix, phone 602-542-3871; elsewhere in the state, phone 1-800-321-0381.

- *Economic Outlook.* Annual forecasts for Arizona, Phoenix-Mesa, and Tucson cover industry employment, earnings, personal income, population, sales, and other economic indicators. Available from the University of Arizona, College of Business and Public Administration, Publications Office. Phone 520-621-2155.

- *Guide to Establishing and Operating a Business:* This publication outlines the steps in starting a business and provides information on planning, developing, and maintaining a business. Available from the Arizona Department of Commerce. Phone 602-280-1321.

- *Major Employers Guide.* This is a listing of large employers, the phone numbers of their hiring offices, and addresses. A guide is available for Phoenix and another covers Tucson, Yuma, and Flagstaff. Available from the Arizona Department of Economic Security. In Phoenix, phone 602-542-3871; elsewhere in the state, phone 1-800-321-0381.

- *Starting and Operating a Business in Arizona.* This step-by-step guide provides information for planning, starting, and operating a business, including clear explanations of laws and taxes, requirements, checklists, etc. Available from the Phoenix Chamber of Commerce. Phone 602-254-5521.

National Electronic Sites

- *America's Job Bank.* Published by the U.S. Department of Labor, this job bank is linked to state employment offices. Job listings are for entry-level to professional and managerial positions. This service is also available at state employment offices, shopping centers, and other public places. http://www.ajb.dni.us

- *Career City.* This online service is operated by Adams Media. It includes job listings, discussion forums, specialized career services, and publications. http://www.careercity.com

- *Career Magazine.* This site offers online information about jobs and employers and provides numerous linkages to other important sites. Phone: 303-440-5110

- *CareerPath.* This database provides free job listings for over 125,000 jobs nationwide. Phone: 213-237-6658

- *CareerMosiac.* This job service, which is mostly for college students and professionals, includes hundreds of job listings in a variety of fields with useful information on each employer and job. In fact, college students can network directly with employers through e-mail for information and advice. http://www.careermosaic.com

- *Career WEB.* This service is operated by Landmark Communications (Norfolk, VA). Users have excess to hundreds of job listings as well as company profiles. http://www/cweb.com

- *E-Span.* Job seekers can e-mail their resumes to the database and search for appropriate job openings from among thousands of listings. Career information and resources are also available. E-Span can be accessed through America Online, CompuServe, and GEnie.

- *National Business Employment Weekly.* This web site has links to many career-related resources and provides lots of good employment-related information. http://www.nbew.com

- *CareerNet.* This site offers links to jobs, employers, business, and education professionals. It also directs users to career-related web resources, including news groups, colleges, associations, bibliographies, software, and libraries. http://www.careers.org

Arizona Electronic Sites

- *Arizona Careers Online.* Operated by Diverse Data, Inc., this resource offers a list of employer job hotlines, a database for resumes, and a listing of service organizations and special interest groups. http/://amsquare.com/america/arizona.html

- *Arizona Central.* Operated by Phoenix Newspapers Inc., this source lists the classified advertisements from The Arizona Republic's Sunday edition. It also provides a database for resumes and articles on careers. http://www.azcentral.com

- *Arizona Department of Education.* This site provides information about instructional programs, available openings, and certification requirements for the state's public and charter schools. http/://www.ade.state.az.us

- *Arizona Job Hotlines.* This online site provides an extensive list of Arizona job hotlines. http://www.icw.com/america/hotlines.html

Annual Surveys and Books

Several magazines publish annual surveys of the best jobs for the year. The most popular surveys are found in–

- the March issue of *Money*,
- the October issue of *U.S. News and World Report*, and
- the July issue of *Working Woman*.

The 100 Best Careers for the 21st Century, Shelly Field (New York: Arco, 1996)

Adams Jobs Almanac 1998 (Holbrook, MA: Adams Media, 1997)

Jobs 1998, Kathryn Ross and George Petras (New York: Simon & Schuster, 1997)

100 Best Companies to Work for in America, Robert Levering and Milton Moskowitz (New York: Doubleday, 1993)

America's Fastest Growing Employers, Carter Smith (Holbrook, MA: Adams Media, 1994)

The Hidden Job Market 1999 (Princeton, NY: Peterson's, 1998)

The Best Jobs for the 21st Century, Ronald Krannich, Ph.D. and Caryl Rae Krannich, Ph.D. (Manassas Park, VA: Impact Publications, 1998)

The JobBank Guide to Computer and High-Tech Companies (Holbrook, MA: Adams Media, 1997)

The JobBank Guide to Health Care Companies (Holbrook, MA: Adams Media, 1998)

150 Companies for Liberal Arts Graduates, Cheryl Woodruff (New York: Wiley, 1992)

Alternative Jobs and Careers

These books for college students are revised annually and published by Peterson's:
- *Job Opportunities for Business Majors*
- *Job Opportunities for Engineering and Computer Science Majors*
- *Job Opportunities for Health and Science Majors*

These books are published by Facts on File:
- *Career Opportunities in Advertising and Public Relations*
- *Career Opportunities in Art*

- *Career Opportunities in the Music Industry*
- *Career Opportunities in the Sports Industry*
- *Career Opportunities in Television, Cable, and Video*
- *Career Opportunities in Theater and Performing Arts*
- *Career Opportunities in Writing*

This series is published by JIST Works:
- *50 Fastest Growing Jobs*
- *Federal Jobs*
- *Top Jobs for College Graduates*
- *Top Jobs for People without College*
- *Top 300 Jobs*
- *Top Industries*
- *Top Military Jobs*
- *Top Medical and Human Services Jobs*
- *Top Office, Management, and Sales Jobs*

The "Careers in..." and the "Opportunities in..." series are published by NTC Publishing.
- *Careers in Accounting*
- *Careers in Advertising*
- *Careers in Business*
- *Careers in Child Care*
- *Careers in Communications*
- *Careers in Computers*
- *Careers in Education*
- *Careers in Engineering*
- *Careers in Environment*
- *Careers in Finance*
- *Careers in Government*
- *Careers in Health Care*
- *Careers in High Tech*
- *Careers in Horticulture and Botany*
- *Careers in Journalism*
- *Careers in Law*
- *Careers in Marketing*
- *Careers in Medicine*
- *Careers in Science*
- *Careers in Social and Rehabilitation Services*
- *Careers in Travel, Tourism, and Hospitality*
- *Opportunities in Advertising*
- *Opportunities in Airline Careers*
- *Opportunities in Banking*
- *Opportunities in Business Management*
- *Opportunities in Child Care*

- *Opportunities in Craft Careers*
- *Opportunities in Electrical Trades*
- *Opportunities in Eye Care*
- *Opportunities in Interior Design*
- *Opportunities in Laser Technology*
- *Opportunities in Microelectronics*
- *Opportunities in Optometry*
- *Opportunities in Pharmacy*
- *Opportunities in Public Relations*
- *Opportunities in Robotics*
- *Opportunities in Sports and Athletics*
- *Opportunities in Telecommunications*